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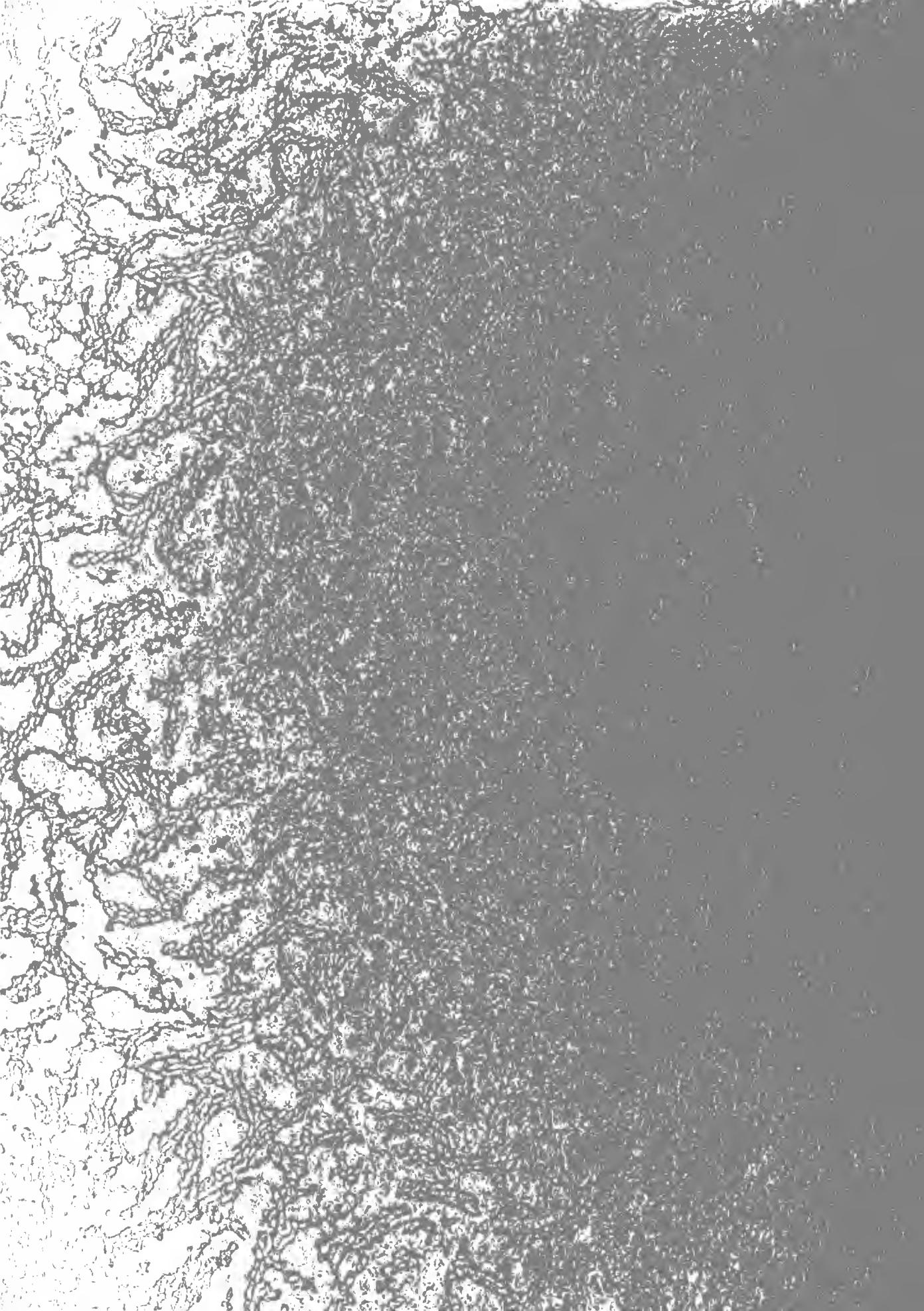
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LXXII

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MEDICINE.

THE REFLEX EFFECTS OF ALCOHOL ON THE CIRCULATION.

LIEB (*Jour. A. M. A.*, March 13, 1915, LXIV, No. 11, 898) shows from detailed experimental evidence that though whiskey may raise for a few moments the systolic blood pressure, and thus act as an apparent circulatory stimulant, inasmuch as it decreases cardiac efficiency, it raises disproportionately the diastolic pressure and lowers pulse pressure.

SOME CLINICAL FEATURES OF THE WASSERMANN REACTION.

KEYES (*Jour. A. M. A.*, March 6, 1915, LXIV, No. 10, p. 804) makes the following concise statements backed up by a large clinical experience: A negative Wassermann is not sufficient evidence of the cure or absence of syphilis. A positive reaction, unsupported by clinical evidence is not sufficient evidence of the presence of syphilis. A positive reaction does not prohibit matrimony. A fixed positive reaction in the later years of the disease does not inevitably point to the prospect of brain lesions. A negative reaction after salvarsan, in the first year of the disease, does not mean that the patient is cured, or that lesions will not appear before the reaction again becomes positive. The return of chancre, glands, eruption and positive Wassermann reaction, a few months after control of the disease by salvarsan in its first few weeks, does not prove re-infection. These are not radical statements, but facts based on large clinical observation of cases.

[E. H. R.]

HORMONAL AND NEOHORMONAL.

DENCKS (*Deutsche Zeitschr. f. Chir.*, November, 1914) was one of the earlier workers with hormonal, both upon animals and in the wards. There is no doubt that this substance often exerted a specific and highly effective action upon the intestine in cases refractory to other medication, and in cases in which hormonal alone was not effective, the simultaneous use of atropine or physostigmine sometimes accomplished results not brought about by the use of any one of these agents separately. Hormonal had, however, one great drawback—its tendency to cause collapse through a sudden fall in blood pressure.

A new form of the old remedy has been presented under the name of neohormonal, with which Dencks has been conducting observations. The new substance is said to be albumose-free, and owing to this improvement, seems to be free from the tendency to cause the undesirable drop in blood pressure with collapse. In the course of forty observations upon animals and one hundred and forty observations upon patients, Dencks failed to observe any such effect. Rather there appeared a transient rise in blood pressure with its level then falling back not below normal, the pressure rise being paralleled by a rise and fall to normal pulse rate and temperature. Further than this Dencks observed no serious untoward symp-

(Continued on page iv.)

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(Continued from page ii.)

toms and he feels that neohormonal may be used with safety and advantage alone or in combination with atropine or physostigmine, to replace the more dangerous hormonal in such conditions as paresis or obstipation where the older remedy would have been indicated.

[J. B.]

HOW SHALL WE TELL WHETHER OR NOT THE MYOCARDIUM IS COMPETENT?

SWAN (*Arch. of Int. Med.*, Feb., 1915) made a clinical test of the value of some of the procedures which have been suggested for the determination of myocardial efficiency in forty cases of cardiac and renal disease. The tests studied were: (1) The variations in the pulse rate between the recumbent and the erect postures; (2) The percentage of the pulse pressure formed by the second phase of the auscultatory blood pressure reading, which is supposed to indicate cardiac strength; (3) The cardiac efficiency factor of Tigerstedt, pulse pressure divided by systolic pressure (normally 25% to 35%); (4) The cardiac strength-cardiac weakness ratio of Goodman and Howell, obtained by determining the percentage of the pulse pressure formed by the different phases of the auscultatory blood pressure and adding together the second and third phases (indicating cardiac strength) and the first and fourth phases (indicating cardiac weakness)—the normal ratio being C. S. : C. W. :: 55.5 : 44.4; and (5) The cardiac overload factor of Stone, determined from the ratio of pulse pressure to diastolic pressure—the normal ratio being 50%, and anything in excess of this representing overload.

The writer concludes that all of these factors have some value in determining the efficiency of the myocardium. He is inclined to think that the cardiac efficiency factor of Tigerstedt and the percentage of the pulse pressure formed by the second phase are the most important. A cardiac efficiency factor of 40% or over points to myocardial inefficiency. A second phase of 30% or under indicates the same condition. The C. S. : C. W. ratio is a less reliable guide, but a C. W. factor greater than the C. S. factor indicates myocardial disturbance. The overload factor of Stone is indicative more of peripheral resistance than of myocardial weakness. A cardiac load below 50%, as determined by this method, giving a negative overload may have some significance.

[L. D. C.]

A REPORT OF THE WORK CARRIED OUT AT THE RADIUM INSTITUTE, LONDON, IN 1914.

PINCH (*Brit. Med. Jour.*, Feb. 27, 1915) presents an abridged report of the work carried on in the London Radium Institute. He first describes in some detail the apparatus in use for giving radium treatment, and the duration and method of applications.

All tissues treated with radium respond in some manner, but the nature and extent of this reaction vary greatly, and depend upon: first, the apparatus, screening and the dosage employed; second, the nature of the tissue treated; third, the condition of the tissue treated; fourth, the extent of the area treated, and fifth, personal idiosyncrasy.

The reaction may take the form of a simple erythema, or an erythema followed by desquamation. Occasionally vesication with superficial ulceration takes place, and rarely deep ulceration.

Pinch first discusses the results with various forms of carcinomata, such as epitheliomata, and carcinoma of the uterus, bladder, breast, rectum, and prostate. Rodent ulcer is the form of malignant disease most amenable to radium treatment. The hypertrophic nodular type with slight superficial ulceration yields the most satisfactory results, whereas the excavating type with undermined and overhanging edges often proves very intractable. Sarcomata, if

(Continued on page vi.)



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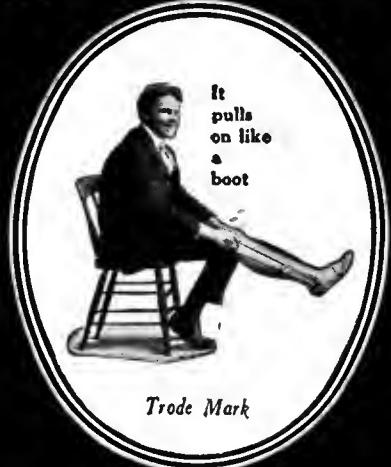
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(Continued from page iv.)

taken in their early stages before dissemination has occurred, do very well under this treatment. In regard to lymphadenoma, the striking feature of the treatment of this condition with radium is the extreme rapidity with which the size of the affected glands is diminished. The best results are obtained when the condition is confined to the glands without involvement of the spleen.

He describes his results in various forms of naevi, warts, and papillomata. In tuberculous glands, some improvement can be obtained, but not if the glands are caseating. He prefers to use the Finsen light to radium in treating lupus. Occasionally, remarkable results are obtained in the treatment of arthritis deformans, and in some skin diseases, such as keloid and pruritus.

[J. B. H.]

THE THERAPEUTIC ACTION OF IODIN.

JOBLING AND PETERSEN (*Arch. of Int. Med.*, Feb., 1915) studied the therapeutic action of iodin in the body, especially its effect in causing absorption of necrotic material. The study here reported concerns the influence of iodin on the antitrypsin of the blood and tissues, the writers believing that the antitrypsin is the most important factor in preventing the resolution of necrotic tissues such as are found in infarcts and in the caseous areas in syphilis and tuberculosis. They found a great decrease in antitryptic strength of guinea-pig serum after treatment with potassium iodide. In thirteen cases in human beings, eleven of whom were syphilitics, they found that the administration of iodides caused a very considerable reduction in the antitryptic activity of the blood. If the action of iodin in causing absorption of necrotic material is due to the general lowering of the antitrypsin, they say, large doses should cause an increase in the nitrogen output owing to the increase of proteolysis. The results of a number of experiments with dogs indicate that the iodides do increase the nitrogen output. In phthisis, when iodides are taken into the tissues, a portion of the iodin is liberated and combines with the unsaturated carbon atoms of the fatty acids. As soon as this occurs in necrotic tissue to a degree sufficient to lower or remove the antifermen action, autolysis ensues, the caseous matter begins to soften and is more likely to rupture into the bronchi and tubercle bacilli appear in the sputum and may be disseminated in the body. In syphilis, iodides bring about resolution of the process but are not curative in the sense that they prevent the return of the lesions. Iodin neutralizes the action of the agents (unsaturated fatty acid radicals) which prevent solution and absorption of necrotic tissue, and at the same time lays bare to the action of the real germicidal agent (mercury or arsenic) the infecting organism which had been protected by the necrotic tissue.

[L. D. C.]

SURGERY.

TREATMENT OF FRACTURE OF THE ELBOW BY HYPERFLEXION AND EARLY IMMOBILIZATION.

UNHOLF AND WOLF (*Surg., Gyn. and Obs.*, March, 1915) in a well written article, with many good illustrations, seemingly demonstrate that the old idea of late mobilization of the elbow after fracture is an improper principle on which to work. They show 53% of perfect results and by perfect they mean absolutely normal arms. They found that the most perfect results were obtained when fractures were immobilized for the briefest period possible: the results were perfect in all of 23 cases in which fixation in hyperflexion was combined with early mobilization and massage. The following table is suggestive:

(Continued on page viii.)

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(Continued from page vi.)

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In first work after injury	27	2
In second work after injury	19	11
In third work after injury	6	15
In fourth work after injury	0	8
In fifth to eighth work after injury	1	11

Also the duration of treatment necessary:

15.7 days for fractures immobilized for 1 week.
24.5 days for fractures immobilized for 2 weeks.
23.7 days for fractures immobilized for 3 weeks.
36.0 days for fractures immobilized for 4 weeks.

They state that hyperflexion does not mean acute flexion, but the most acute flexion in which the elbow can be fixed without obliterating the radial pulse. The article is worth careful study.

[E. H. R.]

SPLENECTOMY IN PRIMARY PERNICIOUS ANEMIA.

ROBLEE (*Jour. A. M. A.*, March 6, 1915, LXIV, No. 10, p. 796) treats thoroughly the subject of splenectomy in primary pernicious and associated anemias. He believes that primary anemia may be due to a toxin which may be of bacterial, chemical or parasitic origin, which in some cases causes an increase in the unsaturated fatty acids, and also a hyperemia of the spleen pulp because of changes in the splenic blood vessels which cause pulp engorgement. The presence of the spleen then seems to cause a diminution in the amount of total fats and cholesterins of the blood which are antihemolytic. Removal of the spleen does not produce injurious effects on the patient. Blood transfusion should always be done prior to splenectomy: the latter operation causes a stunning remission of all symptoms, the blood picture improves markedly but never returns quite to normal. The improvement is rapid but it does not remove the cause. It seems that the morbid spleen functioning is merely one link in the chain of factors causing the disease, but by removing it we make a gap in the chain which is considerable.

[E. H. R.]

THE SIGNIFICANCE OF TUBERCLE BACILLI IN THE URINE.

BROWN'S (*Jour. A. M. A.*, March 13, 1915, Vol. LXIV, No. 11, p. 886) conclusions from a very thorough analysis are that no staining method differentiates absolutely tubercle bacilli from smegma bacilli, but cultural methods may aid greatly. Animal inoculation with the production of tuberculosis is an absolute test but of value only when positive. The same care about the collection of the urine should be exercised as about the collection of sputum. Tubercle bacilli can be excreted through apparently normal kidneys. Radiography may aid in the quick detection of caseous foci when the urine contains no tubercle bacilli. Spontaneous healing is often fictitious. The final, and often best, treatment for renal tuberculosis on diagnosis is nephrectomy followed by the use of tuberculin. Tubercle bacilli occur in the urine in genital tuberculosis usually late in the disease and are consequently of little aid in diagnosis of the condition.

[E. H. R.]

DUPUYTREN'S CONTRACTION.

BLACK (*Brit. Med. Jour.*, Feb. 20, 1915) discusses Dupuytren's contraction in an interesting and thorough manner. This condition is described as a fibrosis of the palmar fascia, not associated with any inflammatory thickening of the skin.

The pathology in detail consists of a thickening and contraction of the digital processes of the palmar fascia; the main body of the fascia is affected secondarily. As a result of this, the fingers become

(Continued on page x.)

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Freedom of every move without exertion.



No tension to hamper the movement of the fingers.

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The exercises will consist of lectures, clinical demonstration of cases, the surgical anatomy of the joints under consideration, the x-ray interpretation of the condition included in the exercises, and will be followed with operations when possible. The following subjects will be considered:

General Methods Used in the Diagnosis and Differentiation of Joint Disease. } Wednesday, March 31st.

Tubercular Disease of Spine, Hip, Knee. } Thursday, April 8th.

Arthritis.

Etiological Factors

Detection and Comparative Significance of Various Joint Manifestations. } Thursday, April 15th and 22d.

Treatment.

Affections of the Foot.

Static Conditions—Foot Strain, etc.

Acquired Deformities of the Foot, etc.

Postural Deformities.

Lumbo-sacral and Sacro-iliac Affections and their Relation to Backache and Sciatica. } Thursday, April 29th

Knee-joint—Various Non-tubercular Affections. } Thursday, May 13th and 20th.

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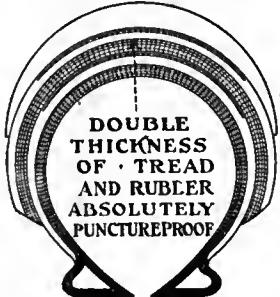
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(Continued from page viii.)

more or less drawn into the palm, although the flexor tendons are not actively contracted. The skin over the thickened fascia may become puckered owing to the fascia fibres.

The disease divides itself into four stages: first, in which the palmar fascia only is involved; second, in which the fascia is involved and one or more digits are slightly flexed; third, in which the palmar fascia is involved and one or more digits are semi-flexed; fourth, in which the palmar fascia is involved and one or more digits are totally flexed. Black has collected 240 cases; and finds that of these, 104 are bilateral.

It occurs much more frequently in men than in women, and is a disease of middle and late life. It often runs in families, and seems to be a disease affecting the non-working class fully as much as the working classes.

There are two antagonistic theories concerning its causation; first, that it is brought about by external agencies; and second, that it is due to an internal or constitutional factor. Black does not believe in our existing state of knowledge that the disease is wholly unconnected with external pressure and other causes, but he does believe that the external causation theory has as yet to be proved. He believes that eventually this condition can be shown to be due to a certain internal condition, possibly akin to a gouty or rheumatic condition among persons of advancing age.

Treatment is operative and non-operative. He quotes one writer who believes that it is a symptom of thyroid deficiency, and who reports favorable results with thyroid extract. Operation is usually necessary.

[J. B. H.]

OBSTETRICS AND GYNECOLOGY.

THE CURE OF ADENOCARCINOMA OF THE UTERUS BY SIMPLE CURETTAGE.

BOLDT AND FEDINSKI (*Surg., Gyn. and Obs.*, March, 1915) go extensively into the detailed pathology of carcinoma of the uterus both in its early and late stages and cases are cited—three in all—in which a cure has been effected by simple curettage for diagnosis. This brings up the question of spontaneous cure to which these authors give little credit. They raise the very pertinent question as to whether cure is possible from curetting only. They warn also against the advocacy of this operation as a cure in place of the radical procedure. The discussion in these papers is of interest to those especially interested in this branch of work.

[E. H. R.]

NITROUS OXID GAS ANALGESIA IN OBSTETRICS.

WEBSTER AND LYNCH (*Jour. A. M. A.*, March 6, 1915) make very timely contributions to the subject at a time when the much-heralded twilight sleep is being advertised to the world in the lay press. Webster especially shows the independability of this new method and relegates it to its proper place in treatment. He then points out the simplicity, safety and freedom from obstetrical objections of gas anesthesia or analgesia during the second stage of labor. It is vastly superior to ether, chloroform or morfine in its degree of safety and lack of interference with isotonic contractions of the mother's musculature. It seems a rational procedure and one worth more extended trial. The administration does not require the skilled anesthetist any more than dental work does.

[E. H. R.]



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Addressee.

CHARLES SEDGWICK MINOT, M.D.*

BY W. T. PORTER, M.D., LL.D., BOSTON.

CIRCUMSTANCES, which should have prevented the career of Charles Sedgwick Minot, contributed largely to its success—the usual paradox. He was born not merely a Bostonian, but a legendary Bostonian. All the crushing disadvantages of an assured position, binding traditions, and a competence, were his. The times themselves were not propitious. The range of thought was narrow. Boston was no longer distinctively a caravan route. Strange cargoes were less frequent. The China seas widened fewer horizons. New people were coming in, floating on the tides of unearned increment. Hardy explorers from the fabled West discovered the North Shore. The old society, solicitous for a point of view justly regarded precious, took refuge in its trenches. The use of Christian names in conversation rose from a convenience to a shibboleth. The spirit of the times was aptly characterized by the President of Harvard University, when he called the Harvard Medical School of that period a dinner club. Those were provincial days in town and nation.

Much may be said of the charm and indeed the real value of limited societies, but they are unfavorable to the development of original minds. On the other hand, once the inertia of position is overcome, the virtues of these particular defects are admirably sustaining. No doubt the Bostonian of literature was a creature never seen on land or sea, yet the Boston spirit was

nevertheless a living force. There rests not the faintest doubt that a provincialism which pitched the note upon honesty of purpose, industry, and almost unexampled devotion to the public welfare, gave to the neophyte in science the indispensable weapons of his lifelong fight. In Minot's hands they were never tarnished; honesty, industry, and public spirit were undimmed to the end.

These attributes, though sufficient for salvation in the ordinary walks of life, are but the tools of thought. The priceless gift is the power to see how known phenomena may be so combined as to reveal new truth. In the last analysis, the setting of fruitful problems is an incomunicable art. Yet those who possess originality of mind can be greatly helped by men whose genius lies in this direction, or by their disciples. Still more may they be aided toward the invention of methods and the development of critical power. The higher knowledge, impossible of record, is an oral tradition. Minot received this tradition from H. P. Bowditch, Ranyer, and especially from Ludwig. Of his debt to all three, he was ever conscious. Ludwig he regarded with true veneration. In this, Minot was not alone. The illustrious Heidenhain said at Breslau that the only physiologists who had really accomplished anything were Ludwig and Marey. Ludwig kindled fires in every civilized country. The world owes him a great debt, still unpaid. His extraordinary powers as a ferment were coupled with an engaging simplicity. Shortly before his death, in his seventy-second year, he said: "The pity of it is, I shall have to leave off just when it becomes most interesting." Ludwig gave to Minot the secret of lifelong youth, the reward of those who continually voyage for discovery.

* Read at a meeting of the Boston Society for Medical Improvement, January 25, 1915.

Minot's first physiological work was a research with Professor Bowditch entitled, *The Influence of Anesthetics on the Vasomotor Centres*. It was published in the *BOSTON MEDICAL AND SURGICAL JOURNAL* in 1874, more than forty years ago. The experiments were probably largely by Minot, but the publication itself bears unmistakably the marks of Bowditch's lucid style and careful hand. In this investigation it was shown that "in the majority of cases the rise of blood tension consequent upon irritation of the saphena nerve is less marked when the animal is under the influence of ether or chloroform than when the anesthetics are not used." This result is due to a diminished activity of the vasomotor centre. Changes in the blood pressure were also noted. Ether causes a rise in the blood tension from 9 to 51 mm. of mercury, while chloroform causes a fall of from 8 to 37 mm. The action of chloroform on blood pressure is due in large part to its influence on the vasomotor centre and only in small part to enfeeblement of the heart.

While at Leipzig Dr. Minot worked under Ludwig's direction on the formation of carbon dioxide in resting and active muscle. This work was published in 1876 in the *Arbeiten aus der physiologischen Anstalt zu Leipzig*. An artificial circulation of blood serum was established through the biceps and the semitendinosus femoris at rest and during electrical excitation of the muscles. It was found that the carbon dioxide given off to the circulating serum was not increased by tetanizing the muscles. The conclusion was that carbon dioxide is not a decomposition product of muscular contraction. The methods employed in this investigation, though good for the time, are not altogether free from loopholes, and the conclusion reached is opposed to our present knowledge that the excretion of carbon dioxide is greatly increased by muscular contractions. It is therefore suspected that the carbon dioxide is after all set free in the muscles themselves, but the evidence is not conclusive.

In 1878 Dr. Minot published in the *Journal of Anatomy and Physiology* his experiments on tetanus, made in the Physiological Laboratory of the Harvard Medical School. They showed that when a muscle is forced to contract by a succession of induction shocks, the phenomena are essentially the same whether the interval between two shocks be several seconds or a small fraction of a single second. In other words, the difference between the various forms of muscular contraction depends merely upon the interval between the single shocks and the variations in the rate of the return of the muscle to its original length. This research was ingenious, laborious, meticulous, a conscientious collection of crumbs left by those earlier at the feast. It marks the end of Dr. Minot's first manner.

The paper on muscle contraction, like the two preceding papers, dealt with problems treated from a purely physical standpoint—an index of the times. Johannes Müller, that great genius who is justly called the Father of modern phys-

iology, had begun the good fight to place physiology among the true sciences, to express biological phenomena in grams, centimetres, and seconds. Helmholtz, von Brücke, Ludwig, and DuBois-Reymond completed his work. In my day, as a student in the University of Berlin, the Kneipe in which physiology was given its modern dress was still pointed out to reverent youth. The job was done most thoroughly—so thoroughly that, after a time, the method became somewhat irksome to persons not especially fitted to be sappers and miners. Whether the scholastic excesses of the physical school caused Minot's revolt or whether his apostasy from the rigid sectarians was a consequence of new studies connected with his appointment to teach histology and embryology in the Harvard Medical School, I will not attempt to say. It is enough to know that he left his foster nurse for what was then called biology, a hybrid of physiology and anatomy, alleged at that time to have inherited the virtues but not the faults of both its parents.

It was a conscious and deliberate revolt. In that same year, 1890, he thus exalts the Egeria of his choice: "We should not study merely the organs of the body, whether in their anatomical or their functional relations. There are persons who never understand the arrangement which Nature has established. We are always separating things from their natural connection and taking up a special series of views, instead of more general ones. There is in the direction of true *general* biology, a vast opportunity which I hope will soon be generously taken advantage of. There are many things which we can hope to understand only when study is prosecuted from that point of view. All of the important phenomena of reproduction, of heredity, of the evolution of species, and of all the relations of actual organisms to the general economy of nature, of sex, of growth and variation, even of death itself, which is a problem I believe capable of scientific solution;—all these things are hidden away to a large extent from the morphologist and the physiologist, they are open to the general biologist." (*American Association for the Advancement of Science*, 1890, xxxix, p. 18.)

It is enough to say that this belief in the perfectibility of the very human biologist has not yet been realized. The hope was common in those days. The history of thought is strewn with broken dreams. They rise like the mirage. The weary traveller, toiling through arid facts, as numerous and as unrelated as the sands of the Sahara, sees afar off the shining lakes of Theory. *There*, on the horizon, is that which shall fit the desert to be the abode of men. The traveller presses on. The mirage dissolves, and from afar the sphinx, inscrutable, looks down upon the immemorial sand. The biologist may dress himself tastefully in the plumage of the physiologist and the anatomist, but this will not create him a new species. Dr. Minot remained essentially a physiologist all his life, though, like many physiologists, he worked from time to time on structure.

His devotion to morphology had probably a deeper source than his special chair in Harvard University. In his youth, the stamp of Ludwig's genius gave his mind a lasting impression. Many years after the Leipzig days, Minot, in a public letter to Mosso, declared that from Ludwig he "had learned to regard the living organism as an apparatus, of which it was necessary to learn both the construction and the working, and always to seek the explanation of the working on the basis of the construction." In Ludwig's generation this passed for truth. So artists once painted portraits by drawing the features and afterwards coloring them. They did not know that the lines of a face are not lines, but the edges of fields of light. Vermeer marks the eye by a clear light upon the lid and a patch of shadow beneath it. The eye is there in unsurpassed perfection and not a line is drawn. Experience has shown that structure is an unsafe guide to function. Anatomy led the infant physiology by the hand and taught the gifted child some lessons that did not stand the test of experience. It was from the anatomist, for example, that physiologists got the notion that the respiratory centre must be a circumscribed group of nerve cells like the nucleus of the hypoglossus. Eight physiologists found this centre each in a different part of the bulb. Later investigators removed each of these centres, but respiration still went on. So it was proved that a community of function may exist in widely separated cells. A physiological centre may or may not be a group of cells closely related in space; it need only be a group closely related in function. But Ludwig's view was orthodox in his day, and powerfully influenced his disciples.

We suspect that in his heart Dr. Minot concealed a regret that he could not become a philosopher. In his letter to Mosso he says: "The agnostic position is the only possible and defensible one for a scientific man to occupy, who is loyal to the spirit of research.—No hypothesis of life yet offered requires serious scientific consideration. A confession of agnosticism is here a positive contribution to the truth. On the other hand, there is no reason for giving up the endeavor to get nearer to the final goal of biology because attempts to reach it by the short cut of speculation have always failed."

He was wise enough to bind himself fast to the mast of demonstrable fact, before he listened to the ravishing song of the sirens of philosophy. There is a brave optimism in his search for an answer to the problem of life. We applaud the bold adventurer the more, because he has set his face against the disheartening conclusion that there is, at present, perhaps no logical hope that the Grail of physiological science can ever be found. The physiologist who seeks the key of life must proceed from established premises. The established data show that the biological scene is a succession of permutations, of momentary equilibriums, of resultants ex-

pressing the interaction of a multitude of factors. But as soon as the individual factors rise above a number so small as to constitute the major criticism upon our petty minds—we speak of chance. It is probable that the riddle of existence will never be solved, because the factors and their possible interactions exceed the apparatus for their detection. No mental gifts will ever make us hear the high-pitched sounds audible to insects, nor shall we ever listen to the music of the spheres.

Dr. Minot began his new scientific life by a study of growth, senescence, and death, subjects which occupied him for thirty years. Very likely he was first attracted to this field by the memorable researches of Dr. Bowditch on the growth of children. Dr. Bowditch often lamented that measurements of children in statistical quantities could hardly be obtained before and after the school age. Nor was it possible to follow month by month the growth of thousands of individuals from birth to maturity. Dr. Minot determined therefore to study growth as a function of age in one of the higher vertebrates other than man. His observations were begun in the physiological laboratory of the Harvard Medical School about 1885. Hundreds of guinea-pigs were weighed every day from birth up to 40 days, then every fifth day up to 215 days, then three times a month to the end of the second year after birth. Most of the results of this great task were published in 1891, in the English *Journal of Physiology*. One of the most important fruits of these studies was the recognition of a new and more accurate method of expressing growth. All previous investigators had figured the absolute rate of growth, i.e. the growth of a child in any one year was the number of pounds gained in that year. Minot points out that five pounds gained by a small child is a greater gain than five pounds gained by a large child. The true rate of growth, he very rightly insists, is expressed by the relation between the growth in any one year and the weight at the beginning of that year. This is Minot's percentile rate of growth.

The principal fact developed in the paper of 1891 was that there is in guinea-pigs a progressive loss in the power of growth, extraordinarily rapid in the early hours of life. In the first forty-five days the ability to grow decreases four-fifths.

The work with guinea-pigs was followed by valuable studies on intra-uterine growth.

Eighteen years after his first publication on growth Dr. Minot summed up his studies in this direction in a book entitled *Age, Growth, and Death*. Here he demonstrates that the rate of growth is highest at segmentation and from that hour declines, at first with great rapidity and then more slowly. The period of most rapid decline is youth; the period of slowest decline is old age. If we consider death to be the bankruptcy of an organism which spends energy beyond its income, the final dissolution is almost

complete before the highly efficient life in the womb is exchanged for that in a much less favorable environment. The paradoxes demonstrated as truths by Dr. Minot's work show us how far from correct are the conventional ideas of life. Birth and death, the accumulation and the discharge of energy, go on unceasingly side by side. There are no terminal stations. Energy is a stream that empties into its source, and life is a function of time.

The book on Age, Growth, and Death treats also of Dr. Minot's views, first expressed in 1890, regarding the increase in the amount of protoplasm within the limits of single cells. By the study of the proportionate volumes of the nucleus and the cell body, he believed he could demonstrate certain laws governing that proportion, and prove that the variations of the proportion establish conditions which are fundamental to the correct conception of growth, differentiation, death, and sex. The most characteristic peculiarity of advancing age, of increasing development, is, in Dr. Minot's opinion, the relative growth of protoplasm. The possession of a large relative quantity of protoplasm is a sign of age. It is essential to rapid growth that the proportion of protoplasm should be small. The development of protoplasm, Dr. Minot taught, is the cause of the loss of power of growth.

It will be observed that this stimulating but incomplete list of Dr. Minot's services to physiology touches but one side of his activity. I have not spoken of his many valuable contributions to morphology, of his text-books, the first of which, especially, much enlarged the influence of the young science of embryology; of his admirable addresses at scientific meetings nor of his ingenious inventions such as the rocking microtome. Time does not serve, nor can one man speak with authority of services in so many fields. Perhaps the highest praise a man can have, is that his biography must be written by a company rather than by a single individual.

It remains to speak of Dr. Minot as a friend. But of his friendship and our personal relations I cannot trust myself to speak. He shone brightest in the adversity of his friends, both by his resolute bearing toward opponents and by his counsel. Of all the words I was privileged to have from him, I best remember his saying that a scientist should never consult his personal happiness and that injuries were best forgiven and forgotten.

I believe that Charles Sedgwick Minot, the friend, the comrade, the distinguished scientist in whose honor we are met, will be in death as in life a staff for the weak, a mark for the strong, a light to guide and cheer despondent men. The weak will see in him a triumph over circumstance; the strong will draw new strength from his unremitting years of high endeavor; and the despondent, averting their sad eyes from the fields on which so many of our ideals have lately fallen, will find in his career fresh hope

and a renewed belief that life is after all worth living.

JAMES GREGORY MUMFORD, M.D.*

BY RICHARD C. CABOT, M.D., BOSTON.

AMONG those who knew James Gregory Mumford and realized his physical limitations, it has become a familiar miracle,—how he accomplished the enormous and varied work which stands today to his credit. But when one looks back over the remembrances of many years and pictures the man,—his looks, his voice, his manner, his build,—the victory over his own temperament seems even more remarkable than his conquest of physical handicaps. He was a reformer yet without many of the reformer's natural attributes. Of the reformer's traditional buoyancy and high spirits, he had not a trace. He was never buoyant or spontaneously expansive. He did not bubble over. He had none of the qualities of a steam roller; yet he was always pressing relentlessly on. He was thin-skinned, sensitive, shy and modest, yet he set himself to push through obstacles that would tear the average man to pieces.

Reformers are usually cock sure. Mumford was never so. He had almost an ironic consciousness of human fallibility,—in himself most of all. His plans and achievements never swept him away. He was their impelling force himself. In a letter written in 1910 to the secretary of his college class, he portrays his work without any of the reformer's ardor and confidence.

"So the simple record runs on," he says, "telling of mild employments in the Harvard Medical School and elsewhere. I like teaching; students pass me out the usual compliments due to credulous senility. (He was 47 when he thus described himself.) I like practising surgery; patients toss me roses mingled with thorns. I like writing about people and things, for the reviewers deal me comments which chasten the soul. Altogether, life continues a pleasant experience. I look forward with composure to the next twenty-five years."

Anyone who did not know his arduous achievements, his daring ideals, his ever-renewed battle with fate and conservatism, might gather from words like these,—indeed from most of his writings,—that he took life easily, smilingly, indulgently. His style has often the light, whimsical quality of one who looks on with tolerance and amusement at the crusading reformers. Yet he was himself a crusader and a reformer. His life never mirrored the easy-chair quality of his style; perhaps it was his way of resting from the sterner efforts of his medical career.

He had the look and manner of a recluse and I doubt if he was ever happier than when alone with his wife in the woods or by his library fire.

* Read at a meeting of the Boston Society for Medical Improvement, January 25, 1915.

The retiring, sensitive side of his nature must have shrunk even more than the average man's from the buffets of a reformer's existence. No one could have felt more keenly than he, for example, the crushing weight of newspaper criticism by medical colleagues, as for example at the time of his connection with the Medical Advisory Board of Emmanuel Church. For he did not love a fight. There was none of the glow of battle in his face. His convictions had not that tough, resistant consistency that makes some of us the surer that we are right when every one yells that we are wrong.

In this paradox we face the central mystery of his life. His was a fighting recluse, a sensitive militant, a shy reformer, a private spirited publicist, a tender footed pioneer. All this was especially marked in his later years. In school and college, the rift in his nature was less visible. It was then his scholarly and refined tastes, not his pioneering spirit, that impressed his friends. Yet his life-long conscientiousness is exemplified in the earliest of all the stories told of him. He was born in 1863. In 1867, when on a drive with his aunt in Rochester, he was shocked to see from the height of his four years of earthly experience, a clothes line still heavy with the week's washing, though the week was nearly over. "What! Friday, and the wash not yet done!"

That conscience,—a New York conscience, not a New England one by the way,—is, I take it, the key to unlock the mystery of his life. Conscience, not buoyancy, made him optimistic. Conscience, not fervor, pushed forward his reforms. Conscience is written into every entry of the journal where in 1879 he listed the books on the shelves of his first library at St. Paul's school. The handwriting is remarkably concise and neat for a boy of fourteen. This book list includes Mommsen, Thackeray, most of the English and American poets, Shakespeare, a good many books of travel, five volumes of the Lives of Engineers and a few modern novels. We cannot be sure that he had read them all, but many of them had been lent by him to other boys whose names, with the dates when they took and returned the books, are methodically recorded. I think a boy is more likely to have read the books that he lends,—especially when the boy is Jim Mumford.

This bookishness remained with him and grew with his growth from the passive to the active or creative mood. The list of his writings is impressive, even from its size.

Eight books,* aggregating nearly 3500 pages, came from his hand within twelve years, and during a slightly longer period, sixty articles in

medical journals. Many of these articles, such as that analysing 300 skull fractures, represented much labor. But the quality and style of this voluminous output makes it far more impressive. Mumford was one of the three or four American medical writers who has seriously tried to write good English. The German method of dumping words in piles upon a page and leaving the reader to deal with them as best he may, is that followed by practically all contemporary writers of American medicine. But this method never appealed to Mumford, who had left behind school-boy English before he left school, and ever after labored to make his writings justify the education which he had received.

As he was the only Bostonian who has ever produced a text-book on surgery, and as the current of his interests flowed strongly towards teaching, it can hardly have failed to be a disappointment to him that he never advanced beyond the rank of instructor at the Harvard Medical School.

But it is doubtful whether he would ever have desired to occupy the office of a professor of surgery, so long as that office remained what it was and still is. As early as 1906, nearly ten years ago, he foresaw the need of a surgical professor who should devote himself like other professors to his office. That a professor should never be obliged to devote a large proportion of his time to private practice in order to make a living, that he should not teach for a merely nominal salary and should give but a small part of his time to teaching or study, is now so generally realized that the anomaly will soon, I believe, be remedied in the Harvard Medical School. But in 1906,—nine years ago,—there were few who dared to hope for such a high standard of instruction. The amateur clinical teacher was the accepted and inevitable portion of every medical school but one in the country. That he saw years before the rest of us the step that medical teaching would take next, by making clinical professors full-time men, was entirely characteristic of the man. We shall find it true in all the great interests of his life.

One of those interests was religion. He was old-fashioned enough to believe in God, in marriage and in other eternal truths to which the excesses of modern enlightenment have for the time very generally blinded our eyes. He believed that the human body in sickness and in health is usually inhabited by a soul, and he cherished the still more unpopular belief that a man's soul may conceivably be as well known to a clergyman who had given it his life-long study as to a doctor who has studied it but fitfully and as a secondary interest. Believing this, he thought it not impossible that a clergyman might help a doctor. He never believed that a clergyman should practice medicine but he was firmly convinced that a doctor should not delude himself with the belief that he owns his patient. That the two professions could work

- * 1. Mumford Memoirs, 1900.
- 2. A Narrative of Medicine in America, 1903.
- 3. Clinical Talks on Minor Surgery, 1903.
- 4. Surgical Aspects of Digestive Disorders, 1905.
- 5. Surgical Memoirs and Other Essays, 1908.
- 6. The Practice of Surgery, 1910.
- 7. One Hundred Surgical Problems, 1911.
- 8. A Doctor's Table Talk, 1912.

simultaneously for one patient's good was the belief underlying what was called some years ago the Emmanuel movement. Like Elwood Worcester, the leader of this movement, Mumford hoped that the doctors would be convinced of this. But they remained unconvinced and as a piece of genuine, widespread and whole-hearted coöperation between minister and doctor, the attempt failed, because the doctors, as a rule, had a low opinion of the ministers.

Nevertheless, I have no doubt that in this, as in his other hopes, Mumford was ahead of his age, in 1908-9, not behind it, and that in some form, his attempt will yet succeed.

Coöperation between doctor and minister was the ideal of this lost cause,—coöperation was also the key note of the next reform which in 1910 Dr. Mumford tried to effect. The Emergency Hospital (now Grace Hospital) on Kingston street, was then in the market. This hospital had always been managed upon a partially coöperative basis. That is, people paid a small fee yearly for treatment there and the physicians attached to it were supposed to get their living—in part at least—out of these fees. Mumford believed that, although faulty in execution, this plan marked out in essentials the right way to support a hospital and to get adequate treatment for the vast number of people of moderate means who now get the worst medical and surgical treatment that a civilized community permits. He wanted to supply the needs of those who will not go to a free hospital clinic or who are refused admittance there, but who are still unable to pay the high prices which accurate diagnosis and rational treatment necessitate. He knew that the poor who visit free hospital clinics are now getting better treatment than any but the very rich. He wanted to bring good medical service within the reach of every one.

To do this he proposed that the old Emergency Hospital should be secured; that a prospectus should be issued explaining the plan of a coöperative hospital, of which he was to be the surgical head and I the medical head. Each of us was to organize a staff of physicians to do under our supervision the work of the hospital and to be paid out of the fees of subscribers who were to contribute so much a year for the right to be treated there without further charge. Dr. Mumford believed that with adequate laboratories and x-ray outfits, with a proper system of group diagnosis by a combination of men, each expert in his own field, and by furnishing to every patient the degree of sympathy, courtesy and consideration now given by the private physician and omitted in most free clinics, the hospital could be made so attractive that it would pay. Science and sympathy he believed could be combined and, by proper organization at a hospital, could be made available for every one at a low price, while yet providing good salaries for the physicians.

Some form of coöperation both with the ministers of religion and with social service workers

he also hoped to bring about at the new hospital. In short, all that we both had failed to accomplish elsewhere, we hoped here to attain. The plan was wholly his and had it succeeded the credit would have been wholly his. We got as far as a typewritten prospectus,—written by him. Then the scheme fell through for lack of funds.

I have told of this plan in detail because, though it came to nothing in Boston, it was undoubtedly a precursor in Dr. Mumford's mind of his Clifton Springs undertaking. Hopes nourished during the time when he was trying to figure out the Coöperative Hospital on Kingston street took a further lease of life when it was proposed to him to become Physician-in-Chief of the Clifton Springs Sanitarium.

That title deserves a moment's notice. Not surgeon-in-chief but physician-in-chief was the name of his office. As head of the institution, he succeeded Dr. Charles P. Emerson, an internist. This he was perfectly fit to do because of his long experience of general medical practice during his summers at Nahant. For 12 years, from 1894 to 1906, he spent nearly half of each year in general family practice, including in the earlier years, very little surgery. This broad and varied experience prepared him to be the Physician-in-Chief of an institution where surgery was by no means the central interest.

"I've agreed to take this big institution," he writes in August, 1912, "and build it up, getting together a high-grade staff and other trifles. There's a great opportunity, great interest and great promise. I shall not be cut off from Boston. I am retaining a surgical lectureship in the University and shall come each year to give a course or courses. I am feeling well and chipper." This was scarcely six months after his second serious breakdown, an attack from his life long enemy, rheumatic heart trouble, which two years later cost him his life. With the irrepressible hopefulness that had been but temporarily checked by the failure of the coöperative hospital scheme in Boston, he plunged into his last and best crusade, the attempt to make out of Clifton Sanitarium a great coöperative medical and surgical institution. Despite the splendid leadership of his predecessor, Dr. C. P. Emerson, the staff had not been thoroughly reorganized, so that Dr. Emerson's new methods had not been able to permeate and reinvigorate the old institution. It had remained a place where people went to rest and sometimes stayed to rest indefinitely. Mumford began to make of it an active institution where people could be treated and put back into the world fit to work.

Under his inspiring leadership a splendid body of young physicians and surgeons was rapidly being accumulated and the methods and standards of the place were being modernized, when a difference of policy between Dr. Mumford and the financial heads of the institution led to his resignation, very shortly before his death.

As we look back over this record of Dr. Mumford's, we might well interpret it as one devoted to lost causes. He did not see established at Harvard such a full time Professorship of Clinical Surgery as he might well have aspired to fill. He did not live to see that closer coöperation of doctor and clergyman for which in the Emmanuel movement he had hoped. In Boston and later in Clifton Springs his eagerness to organize a coöperative hospital, serving the whole public, received a check. Yet he was never and could never have become a disappointed man. He lived by faith and not by sight. He knew that the reforms he fought for must come to pass sooner or later. He bequeathed his unfinished task to us. We have taken from his hands the tools he was forced to lay down. Two, at any rate, of the three medical reforms for which he lived and died,—full time clinical professorships and a medical clinic where every one, no matter how rich or how poor, can be treated by physicians paid out of the fees thus collected,—these two reforms I believe we shall see carried out here in Boston within the next few years. That is what he most wanted,—the goal itself, not his personal share in it. He ran his distance and passed on his message to us.

We are here to commemorate James Gregory Mumford. The sincerity of that intention will be manifest when we dedicate ourselves afresh to the task for which he gave "the last full measure of devotion" when we "here highly resolve that he shall not have died in vain." To us is bequeathed the task he left unfinished, that his ideal of medical service organized by the medical profession for all the people shall be made a reality in America.

Original Articles.

THE CHANGED POSITION OF THE PROFESSION OF MEDICINE.

BY DAVID W. CHEEVER, M.D., BOSTON.

HAVING begun the study of medicine in 1854, and its practice in 1858, I can look back over sixty years of medical events; besides this, being descended from two generations of doctors, medical influences surrounded me from childhood. I therefore feel that I am qualified to survey all this period, while excusing myself from too much egotism. Two great changes in medicine will naturally occur to everyone, namely, anesthesia and asepsis. These, however, I do not feel it necessary to detail, but shall confine myself to two classes of influences, one external or arising from outward circumstances, the other originated by the doctor himself. Naturally we must consider the external

circumstances first; but before doing so, it will be useful to glance at the real condition of the medical profession in my childhood.

Active interference with disease and the use of strong remedies were in vogue. Deadly mineral poisons, such as antimony, mercury, and lead, were largely used. Emetics, now rarely used, were habitually employed, and sometimes, I think, with benefit. There was a strong feeling that unhealthy influences could be expelled from the body by purgatives. These were freely and frequently used. It was thought that the taking of blood from the body by repeated venesection reduced fever and led to the generation of a new and better blood. It was an old-fashioned habit with a good many people of adult or middle age to be bled once a year, whether sick or not, as a sanitary measure. My father bled people. I myself have sometimes bled patients by venesection, and in properly selected cases I am convinced it is a remedy of value. All sorts of spring medicine, or "spring cleansing" as I call it, were popular, and they are popular still. The other remedies mentioned have mostly fallen into disuse. It thus can be shown that the medical mind, and hence the popular mind, were very much in favor of considering disease as an entity, which could be "knocked out," so to speak, by a sharp counter-blow given by the doctor.

Under these circumstances, about the year 1850—I cannot be precise—there arose a great medical doubt. Sir John Forbes in England, Dr. Jacob Bigelow and Dr. O. W. Holmes in America, enunciated a new theory, as follows: that all diseases were self-limited, having a natural rise, progress and decline, and hence were little influenced by medicine. If this were true, it naturally followed that it was the best policy for the doctor to care for the patient by watching his symptoms rather than by using very active medication of uncertain power. From this arose what was called Expectant Treatment: to wait on Nature; to be sure to do no harm, if you could do no good.

I must be allowed to return a moment to myself. I did not seriously study medicine until I was twenty-three years old. I was fairly mature; I had had large collateral reading; I absorbed these doctrines and I wrote them up in the *North American Review* and in a Prize Essay. I entered upon the study of medicine with an intensity which proved that I had chosen the right calling. These nullifying doctrines had a very depressing effect on me. What was the use of practising an art which could promise so little? I almost felt tempted to give up my profession. Fortunately for me, I was led to continue the study and teaching of anatomy for eight years, and thus passed on to the pursuit of surgery, where I found solid ground. As time went on, like all other doctors of my time, I did practise medicine as well as surgery. Experience taught me that the doctrine of self-limited disease was

not all true, that there was something in drugs; on some I learned to rely; and I still believe they are useful.

All this personal digression is for the purpose of trying to bring before the reader the exact condition of medical practice about fifty years ago. We are now ready to consider those influences which changed medicine, arising from without. And the first of these is Homeopathy.

This novel and peculiar belief, "made in Germany," never attained its full vigor in the land of its birth; prevailed very moderately in France, but to a greater extent in England. It received, however, a prompt recognition among certain of the more educated classes in this country and attained here an exotic growth; following soon after the introduction of the speculative views of German philosophy, it seemed to some to ally itself with them and to be a new advance in reasoning. It had two dogmas: one that the strength of medicines was increased by minute division and sub-division; the other that if a drug taken in health produced certain symptoms, it would affect or cure any diseased condition which was characterized by like symptoms. Those who professed this method necessarily rejected the older methods which opposed it. Hence the physician who was old-fashioned or regular rejected this belief as an exclusive and one-sided dogma which denied all other things which he believed true; and as these new views were diametrically opposed to his own as to the *treatment* of the sick, he was consistent in refusing a consultation with the homeopathic doctor, because it could do no good. This new practice attracted many people from the better classes and proportionately diminished the *clientèle* of the regular doctor. Homeopathy for some years increased, founded schools, endowed hospitals, established medical societies, divided the public into sects of medical belief. As time wore on, it grew less distinctive, and the methods of old or regular practice supplanted it to a large extent.

Meanwhile another new belief in healing, of a semi-religious character, calling itself Christian Science, or Mental Healing, arose. Its doctrine was that the will could control organic processes either wholly or to a much greater degree than had previously been supposed. It encouraged all weakly people to try to get well by themselves; and to a certain degree its influence was salutary. But when it undertook to cope with acute or contagious disease or to seek to control the heart, the stomach, the bowels, the uterus, which were constituted by nature, and purposely so, to be beyond the influence of the will, it failed. The bacteria of diphtheria, unrestrained by Christian Science, were diffused among other members of a family; pneumonia was encouraged to will to be well, and the patient sometimes, rashly exerting himself, hastened a fatal result; the retained secundines

at childbirth destroyed the patient by a fatal flooding, when the will-power failed, as it must fail, to contract the uterus. The mixture of religious belief with these medical theories influenced and attracted very many people, and are still in our own day an obstacle to medical practice, although the brilliant advance of medicine in laboratory methods, making our profession a new science, will gradually overcome them.

The next change in the last half-century was the entrance of women into the medical profession. The new woman, emerging from the seclusion of inherited Puritanism, now demanded admission into our ranks. The regular physicians hesitated to admit her claims for two reasons: first, that her presence at medical meetings would interfere with freedom of discussion; second, that many patients of either sex would object to being examined in detail in the presence of both sexes, and that to render such a patient unconscious by anesthesia and then submit him or her to such an examination was unfair. These fears have proved to be well-founded. However, women have freely entered the medical profession; and practise, so far as I know, every form of surgery, as well as medicine and obstetrics. It must be conceded, however, that their services are largely limited to their own sex.

An important influence on the *materia medica* employed by the physician was now exerted by the enormous advance in chemistry. We can almost say that it has revolutionized the relation of the druggist to the doctor. The latter had relied on a druggist of repute to select pure drugs and to compound them under the doctor's direction by the so-called prescription. The relations of doctor and druggist were thus intimate; each relied on the other. But now new modes of manufacture and new remedies made by synthetical chemistry have taken the place of many of the old tinctures and pills. As another instance, the extraction of alkaloids, or the active principle of drugs, has furnished concentrated remedies in minute and cleanly form; these alkaloids are also indispensable in the subcutaneous administration of remedies. Being more palatable, the new medicines furnished by chemistry are more sought after by the public; thus they have contributed to enlarge the use of proprietary medicines to the detriment of the ignorant; the abuse of narcotics is thus partially to be explained. It is fair to consider, however, that the supposed purity of materials and the supposed accuracy of manufacture depend upon the reputation of the manufacturing chemist.

Finally, among external influences, the growth of hospitals has been the most potent of all in changing the practice of medicine. Half a century ago, there was but one large hospital in Boston. Through its influence, it came to pass that, since no fees were allowed to be

charged by its physicians and surgeons for the care of its inmates, whether rich or poor, some of its medical staff established a private hospital, in which they could receive remuneration for their services. I mean to say that this was a local influence. General influences, however, were abroad in all communities, which led to a demand for, and the increase of, hospitals of every grade. We might say that the hospital has become universal, much to the detriment of the medical profession pecuniarily, for there is often an abuse of charity, since others than the poor habitually seek the hospital, and deprive the doctor of his pay. This is especially the case among those who come and go daily in the out-patient departments. But in the wards also there are occasionally wealthy patients, some of whom would wish to pay, while others seek to escape any such obligation. The majority of doctors are placed somewhat at a disadvantage by the abundance of hospitals, and perhaps in comparative reputation with the physicians who hold positions in them. Today even moderate communities have their hospitals; cities many, towns or villages one. It must thus be evident that the private physician, surgeon, and even specialist have the amount of their business decreased and their earning capacity limited by hospitals. It is not necessary here to discuss whether the public are not benefited by the hospitals; I confine myself to their influence on the profession of medicine.

This completes my enumeration of the external circumstances which have influenced the profession of medicine, and we now turn to those changes which physicians have brought about themselves. Fifty years ago Specialism was almost unknown and was limited to the special senses, as the eye or ear. Gradually specialties have increased more and more, until now their divisions and subdivisions are so minute as to be bounded by a single organ. The specialist justifies his position by saying that he knows more on any single subject by confining himself to it. The family practitioner, however, urges that the specialist loses that full consideration of the general well-being of the patient which he himself acquires. It is certainly unfortunate that the doctor does not have now the whole of his patient, and that the patient does not have an individual doctor. A large family, the members of which one general practitioner formerly took care of, knowing by experience their heredity, their tendencies, their habits, now seeks the advice of four or five specialists. Apart from other considerations, expenses are thus increased; for the specialist, having fewer patients and fewer calls for his services, is justified in charging larger fees.

This leads us to say a word of what has been called Commercialism in medicine. This I understand to mean thinking more of the fee than

the patient and charging all that the patient can pay. I wish it distinctly understood that no one is more particular than myself in charging fees to patients who are able to pay, provided such fees are reasonable, and we must all agree that the very rich man or one of social prominence should be charged more for skilful service than his neighbor of limited means. But very large sums claimed as a return for professional services have, as I believe, injured the reputation of the profession. The scandal of the "split fee" I have never personally met with.

The next change created by the physicians themselves is Publicity. The reticence of the doctor was formerly proverbial. It was not deemed wise to tell the patient too much. Every medical utterance has an exaggerated importance, and an opinion too freely imparted worries and depresses the patient. So also it used to be thought that to take the public into your confidence and to communicate the "little knowledge which is a dangerous thing" was injurious; that people got false ideas and went astray; and that, on the whole, more harm than good was done. Now all this is changed. However, when public medical lectures are confined to carefully selected subjects and limited to hygienic measures, they may be useful.

Medicine has been advanced to approximate a Science by Laboratory methods. These methods have supplanted the guess-work of earlier diagnosis. They are invaluable; they have been produced gradually by patient investigation and self-sacrificing and sometimes dangerous labors; and they have come to stay. They are the first line of defence against delusion and superstition in medicine. Moreover, they have given us Preventive Medicine. In my earlier days there was but one disease which could be surely averted, and that was smallpox by the use of vaccination. Now the discovery of serum-therapy and the injection of anti-toxins control diphtheria, temporarily control typhoid, and offer great hope in the treatment of meningitis, tetanus, rabies, and some other diseases still under investigation. No greater change in the practice of medicine could be imagined.

Finally, the Trained Nurse was introduced among the sick by the doctor himself, first, in hospitals, as was natural, then in private life. She is a great help to the doctor; she relieves him of drudgery; she lessens his anxiety; she should be his executive assistant, and not aspire to be his partner. She should be modest in her *dicta*, for her opinion is constantly sought and carries weight. While in acute disease her full fees are no more than they should be, yet in cases of long illness some means will eventually be found by which the very heavy expense of her service may be diminished.

THE MENACE OF SYPHILIS TO THE CLEAN LIVING PUBLIC.

BY J. HARPER BLAISDELL, M.D., BOSTON,

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[From the Records of the Skin Department of the Boston Dispensary.]

EVERY community is divided into two classes of individuals,—those who have syphilis and those who are exposed to it. Medical science and lay interests have been focussed upon the diagnosis and successful treatment of the disease in those afflicted with it to the practically total exclusion of the now greater problem of the rights and protection of those who may be exposed to it.

Two factors enter largely into the present indifference on the part of the physician and layman alike to the relation of this disease to public health. One is the fact that syphilis has been and always will be closely identified with immoral sexual relations. The acquisition of the disease is felt to be but a just punishment for the mis-deeds of its possessor. Blinded by the venereal aspect little thought has been given to the question of how active a menace it may be as an infectious disease to the general clean living public.

The second factor making for indifference is that we are absolutely ignorant as to the prevalence of the disease with which we are fighting. An approximate number even of those having the disease in this Commonwealth is absolutely unknown. Opinions among the medical profession are at the widest variance. One extremist takes the lofty attitude that such a disease cannot be present among the high-class clientele that he may have. Otherwise broad-minded physicians frequently rule out the disease for no better reason than "I have known the family

for years." The other extremist sees the spirochete at the bottom of every puzzling case.

For several years past syphilis has been made a reportable disease by the City of New York and the figures reported by the health authorities there probably represent as accurate an estimate of the amount of the disease in a given community as any now available. During the fourteen weeks from July 4th to October 3d, 1914, 25,633 infectious and contagious diseases were reported in the City of New York with a population of a little over five and one-half millions. Syphilis stood first in the list with 6342 cases or 28%; tuberculosis second, 5525 cases or 21%; diphtheria third, 3370 cases or 13%; measles fourth, 2750 cases or 11%; scarlet fever fifth, 1064 cases or 4%. Figures like these bespeak for themselves the urgent necessity of establishing regulations for the control of those having the disease and for the protection of the community.

For the purpose of finding out how definite a menace individual cases of syphilis may be to the community, sixty cases in the early stages were selected as they happened to come to the Skin department of the Boston Dispensary and the relation of their infectiousness to their associates studied. The tabulations include sex, age, marital relation, occupation, duration of the disease in weeks, presenting symptoms, methods of living and eating, the number of persons exposed through coitus since infection, the number definitely exposed through family life or association in boarding houses, the number of co-workers exposed; and the number of known infections from the case in hand. The co-workers' exposure column includes only those that came in active contact with the infected person through toilets, drinking facilities, etc. No attempt was made to record the number of persons exposed by casual contact as for instance,—eating in the same restaurant, being waited on in a store, or consuming food products handled by the infected person. The table in full with a more detailed explanation of some of the more striking cases is as follows:

Case No.	Sex.	Age.	S. M. W. D. Work.	Dur. in Wks.	Symptoms.	Method of Living.	Method of Eating.	Couit.	Family or Boarders.	Co-workers.	Known Infec- tions.
1. M. 21 S. None				6	Primary No. sec.	Home	Home	0	10	0	0
2. M. 21 S. Clerk				14	Primary Rash Mucous p.	Rooming	Restaurants 5	6	10	50	0
3. M. 21 S. Shoe worker				3	Primary	Home	Home	5	5	—	0
4. M. 20 S. Printer				4	Primary	Home	Home	5	7	—	0
5. F. 20 S. Clerk				2	Primary	Home	Home	0	4	100	0
6. F. 39 M. Home				10	Rash Mucous p. Condylom.	Home	Home	20	5	0	0
7. F. 37 S. None				6	Rash Mucous p.	Rooming	Boarding house	4	18	—	0
8. F. 24 S. Cashier				2	Primary of Lower lip	Home	Home	1	6	20	0

Case No.	Sex.	Age.	S. M. W. D. Work.	Dur. in Wks.	Symptoms	Method of Living.	Method of Eating.	Coitus.	Family or Boarders,	Co-workers.	Known Infec- tions.
9. F. 19 S. Candy		3	Mucous p. Condylom.	Home	Home			6	9	50	2
10. F. 19 S. Waitress		20	Rash Mucous p. Condylom.	Rooming	Boarding house Restaurant	0		5	40	0	
11. M. 28 S. Electrician		1	Primary	Home	Home			0	3	—	0
12. M. 27 S. Printer		8	Primary Rash	Home	Home			10	5	10	0
13. M. 34 S. Shoe		16	Rash Mucous p. Condylom.	Rooming	Boarding house	2		15	3	0	
14. M. 28 M. Laborer		8	Primary	Rooming	Boarding house	2		5	0	0	
15. M. 26 S. Machinist		12	Muc. patches	Rooming	Boarding house	6		5	70	0	
16. M. 30 S. Shoe		26	Rash	Rooming	Restaurant	2		14	—	0	
17. M. 38 S. Carpenter		10	Primary Rash Muc. patches	Rooming	Boarding Restaurant	2		18	—	0	
18. M. 31 S. Chorus man		7	Primary Rash	Hotel	Restaurant	3		—	40	0	
19. M. 21 S. Pool room		24	Rash Muc. patches Tongue	Boarding house	Restaurants 3-4	0		10	—	0	
20. M. 21 S. Messenger boy		6	Primary Rash	Home	Home	0		9	15	0	
21. F. 37 W. Candy		24	Rash Muc. patches	Home	Home	0		4	—	0	
22. M. 16 S. Actor		12	Primary of Lip Mucous p.	Home	Home	0		2	0	0	
23. M. 20 S. Teamster		5	Primary	Home	Home	0		5	6	0	
24. F. 19 S. Labor		12	Rash Mucous p.	Rooming	Restaurants 3-4	0		5	—	0	
25. F. 32 M. Labor		7	Rash Mucous p.	Rooming	Room	8		2	0	0	
26. M. 19 S. Machinist		26	Rash Mucous p. Alopecia	Home	Home	2		4	30	0	
27. F. 24 S. Nurse		6	Rash Mucous p.	Family	Family	0		7	—	0	
28. M. 20 S. Clerk		3	Primary	Home	Home	0		3	4	0	
29. M. 21 S. None		2	Primary	Home	Home	0		5	—	0	
30. F. 30 S. Cook		9	Primary Rash Mucous p.	Family	Family	0		1	9	0	
31. F. 42 M. Home		26	Mucous p. Rash Condylom.	Home	Home	4		4	0	1	
32. M. 49 M. Pullman porter		10	Primary Rash Mucous p.	Home Boarding House	Home Restaurant	2		5	—	0	
33. M. 23 S. Longshore		24	Rash Mucous p.	Rooming	Boarding house	0		8	100	0	
34. M. 18 S. Machinist		5	Primary Rash	Rooming	Restaurants 4	2		7	12	0	
35. M. 22 S. Cook in dairy lunch		26	Primary of Finger Rash Mucous p.	Rooming	Restaurant	0		12	—	0	
36. M. 20 S. Dish washer in restaurant		2	Primary	Rooming	Restaurant	0		15	5	0	
37. M. 23 S. Butcher		4	Primary	Rooming	Hotel	0		7	16	0	
38. F. 35 S. Labor		14	Rash Mucous p.	Rooming	Restaurant	3		20	—	0	
39. M. 18 S. Drug clerk		3	Primary	Home	Home	3		6	2	0	
40. F. 23 S. Waitress		14	Primary Rash Mucous p.	Rooming	Restaurant	0		12	6	0	

Case No.	Sex.	Age.	S. M. W. D.	Work.	Dur. in Wks.	Symptoms.	Method of Living.	Method of Eating.	Coitus.	Family or Boarders.	Co-workers.	Known Infections.
41.	M.	23	S.	Mechanic	14	Primary Rash	Rooming	Restaurant	0	6	4	0
42.	F.	21	S.	Clerk	12	Primary Rash	Home	Home	0	5	20	0
43.	M.	24	S.	Clerk	6	Primary	Home	Home	0	3	—	0
44.	M.	27	M.	Fruit hawker	15	Rash Mucous p.	Home	Home	1	2	—	1
45.	M.	24	S.	Elevator	6	Primary	Home	Home	8	4	—	0
46.	M.	25	S.	Iron worker	7	Primary	Rooming	Restaurant	4	25	—	0
47.	F.	25	M.	Wife of No. 44	12	Rash Mucous p.	Home	Home	1	2	0	0
48.	M.	23	S.	Mechanic	8	Primary	Rooming	Boarding	2	6	30	0
49.	M.	30	S.	Cook	8	Rash Mucous p.	Rooming	Restaurant 5-6	2	7	?	0
50.	M.	48	S.	Teamster	16	Primary Rash Mucous p.	Rooming	Restaurant	4	16	7	0
51.	M.	24	S.	Waiter	9	Primary Rash Mucous p.	Rooming	Restaurant 3	0	8	—	0
52.	M.	25	S.	State work	3	Primary	Home	Home	2	6	—	0
53.	M.	26	S.	Actor	4	Primary Mucous p.	Rooming	Restaurant 2	2	2	0	0
54.	F.	24	S.	Saleslady	?	Wass. + + +	Rooming with No. 53	Restaurant 2	2	2	?	1
55.	M.	22	S.	Painter	3	Primary	Home	Home	0	6	—	0
56.	M.	32	S.	Metal worker	8	Primary Rash Mucous p.	Rooming	Restaurant 2	2	10	—	0
57.	F.	17	S.	None	10	Rash Mucous p. Condylomata.	Home	Home	3	3	—	0
58.	M.	26	S.	Tattooist	1	Primary	Rooming	Restaurant	0	3	0	0
59.	M.	29	M.	Teamster	6	Primary Rash Mucous p. Condylomata.	Home	Home	2	4	2	0
60.	F.	28	S.	Boarding house keeper	4	Primary of tonsil Rash	Boarding	Boarding	1	25	0	0

CASE 6. Married woman. Husband away for six months at a time. Five children from ages of six to twenty at home. Earned extra money by immoral life in flat up-stairs kept by a professional.

CASE 7. Poverty stricken woman of subnormal intelligence living on charity and occasional immoral earnings.

CASE 8. Girl of good family with primary of lip of unknown origin. Was having occasional intercourse with fiancé who neither had nor contracted syphilis.

CASE 9. Typical "tough" girl working in a candy factory who is in the habit of having promiscuous intercourse with her male friends. Two of them not recorded in this series, were infected.

CASE 10. Waitress in a well known restaurant with very active and infectious syphilis.

CASE 14. Italian laborer, sleeping with another man, who planned to return to his wife and two children in Italy within two months. I know of two other similar cases not recorded in this series.

CASE 21. Woman with active mouth lesions of syphilis, who worked in a candy factory. Had two small children, a husband and a lover.

CASE 22. Actor in a musical comedy show with a primary of the lip and mucous patches who was in the habit of kissing many of the chorus girls frequently.

CASE 27. High class nurse in a doctor's family. Had active secondaries before the trouble was discovered. Had complete charge of two small children and was treated as one of the family, eating at the same table, using the bath-room, etc.

CASE 31. Woman with very active syphilis and several "friends," who infected her two-year old baby with a primary of the forehead, presumably from kissing.

CASE 35. Cook in a dairy lunch place with a primary of the finger and extremely active secondary lesions of many weeks' duration. This man handled all the food, drinking glasses, dishes, etc., of a great many people daily. His infection prob-

ably came from some dish or glass used by a syphilitic. This case was so extreme as to necessitate its being sent to the State Hospital.

CASE 38. Young woman with active mouth lesions eating in the dining room of a local Y. W. C. A.

CASE 39. Drug clerk with active lesions who served many sodas daily.

CASE 44. Fruit pedlar who had relations with many girls to within one week of marriage. Wife showed active lesions of syphilis and was pregnant.

CASE 45. Elevator boy with large ulcerative primary of penis. Had had relations with as many as eight girls since date of infection and used toilet in common with about 300 people in the office building.

CASE 58. Professional tattooist following fairs. Denied using saliva in moistening pigments altho knew of its being done.

CASE 59. Teamster with primary and all the secondary manifestations living at home with his wife and two small children. He could not be prevailed upon to bring them in for examination and the case was soon lost sight of.

CASE 60. Woman lodging-house keeper with a primary of the tonsil. One of the servants in the house had syphilis, according to the boarders. Woman had a fiancé with whom she had been in the habit of having occasional intercourse during the past year. The fiancé denied all syphilis and married the woman two weeks after the diagnosis was made, as they had originally planned before the primary appeared. The case dropped from the clinic and the source of the syphilis was never determined.

These sixty cases definitely exposed through coitus from the time of their infection to their first appearance in the clinic for treatment one hundred and thirty-four (134) people. Four hundred and forty-two (442) others were coming in contact with them in the intimacies of family or boarding-house life. Six hundred and fifty-one (651) fellow workers had been brought in contact with them sufficiently to run a definite danger of contracting the disease.

Of these sixty cases 41 were men and 19 were women. There were four extra-genital and presumably "innocent" primaries, the number being evenly divided between the sexes. One wife contracted the disease from her husband and five girls were infected by their fiancés. Thirty-nine of the men and eleven of the women acquired the disease in distinctly immoral ways.

The ages of the patients show how closely the disease is associated with young adults. The youngest patient was 16, the oldest 48. Eight men and five women contracted the disease under 20 years, seventeen men and six women between 20 ad 25, ten men and two women between 25 and 30, and six men and six women after their thirtieth year.

The course of every infectious disease may

be diagrammatically represented by three links of a chain. The patient at hand corresponds to the middle links, with the source of his infection being the first link, and those to whom he passes the disease being the third. The stamping out of the disease depends as much upon the prompt discovery and control of his source and the prevention of his possible exposure of others as upon the proper medical care of the patient himself. Generally speaking, either in hospital or private practice, little effort is being made along this line. This series strikingly shows the extent of the present neglect and how vast a field of preventive medicine is still untouched.

These sixty cases of fresh untreated syphilis are the direct result of sixty other definitely active foci of infection in the community. Out of these sixty foci only two were brought under medical care and control. Of the 576 people exposed through coitus or family life five were known to have been infected,—four through intercourse and one by being kissed by the mother. Of the 571 equally possible infections nothing is known.

The danger of syphilis to the community as well as to the individual is increased in proportion to the inadequacy of the treatment received by those suffering from the disease. For the purpose of finding out how great a menace syphilitic patients are to themselves and their fellow-beings through neglected treatment a careful statistical investigation of this portion of the clinic was made in order to find out how effectively patients follow their doctors' advice.

Every visit of every new syphilitic patient entering during the twelve months beginning July 1, 1913, has been tabulated from the date of entrance to September 1, 1914. The amount of time which the patients might have been under treatment varies from fourteen months for those who entered in July, 1913, to three months for those coming to the clinic last June. The table showing the number of visits that the patients of the various months of entrance made is as follows:

No. Visits.	July-Dec. Total.	Per Cent.	Jan.-July Total.	Per Cent.	Grand Total.	Grand Total. Per Cent.
1	68	.272	58	.288	126	.280
2	38	.152	33	.164	71	.158
3	31	.124	28	.136	59	.130
4	32	.128	24	.119	56	.124
5	18	.072	18	.090	36	.080
6	12	.048	10	.049	22	.048
7	10	.040	14	.070	24	.054
8	8	.032	8	.039	16	.036
9-15	25	.132	8	.045	33	
16-23	8		0	.045	8	.000
Total	250	1.000	201	1.000	451	1.000

The 451 new syphilitic cases of the year were divided into 164 primaries and very early cases, 136 secondary cases, 107 late syphilites, and 44 congenitals. From the preceding

table it will be seen that 126 of the 451 patients, or 28%, came only once to the clinic. Seventy per cent. of the patients made less than five visits,—a number insufficient in most cases to relieve even the presenting symptoms for which they entered,—and 9% only came more than eight times. The two half-years represent two different medical services, and it will be noticed that the differences in the patients paying one, two, three, four, and five visits are negligible. The more recent service naturally has fewer patients paying a large number of visits.

The attendance of the 451 patients has been analyzed from another stand-point to show the difference between the visits required for relatively good treatment and the number that they actually made. An average of one visit every three weeks from the time of entrance to September 1st has been arbitrarily selected as a minimum measure of efficient treatment. Thus 31 patients coming to the clinic during May theoretically ought to have made an average of six visits apiece during the four months to September 1st, or 186 visits for that group. The table in detail is as follows:

Month	No. of Patients.	Required Visits.	Actual Visits.	Percentage.
July	45	945	234	.247
August	55	1100	220	.200
September ...	32	576	160	.278
October	42	714	176	.246
November	36	540	153	.283
December	40	560	141	.252
Total	250	4435	1084	.244
January	33	396	107	.308
February	28	308	87	.282
March	36	324	127	.392
April	31	248	130	.524
May	31	186	115	.618
June	42	210	145	.690
Total	201	1672	711	.425
Grand total 451		6107	1795	.294

During the months from July, 1913, to December, 1913, inclusive, 250 new cases of syphilis visited the clinic. On the bases referred to 4435 visits ought to have been made by these patients. Actually 1048 were made or 24.4% of the required number. This percentage remained fairly constant throughout the period, the variations among the six months being only between 20% and 28%.

During the six months beginning January, 1914, and closing June 30 there were 201 new cases of syphilis who up to the close of September should have paid on the basis assumed 1672 visits. Actually 711 visits were paid or 42½%. The percentages show interesting increases during the more recent months as follows: January, 30.8%; February, 28.2%; March, 39.2%; April, 52.4%; May, 61.8%; June, 69.0%.

Summarizing the two half years it was found that during the twelve months beginning July

1st, 1913, the 451 cases should have paid 6107 visits to the clinic up to the close of August. Actually 1795 visits were paid or 29.4% of the needed number.

The explanation of the increasingly better attendance during the recent months is a simple one. During the first three months after beginning treatment a considerable portion of the patients come regularly, one-half or more paying the number of visits needed during this period. After the first three months, when symptoms may be relieved but cure cannot have been effected, patients return much less regularly. After the first few months the clinic averages only 25% of the visits required for minimum efficient treatment.

SUMMARY.

1. The amount of syphilis in Massachusetts today is absolutely unknown. Figures from communities where the disease is reportable show it to be one of the two most prevalent infectious diseases with which we are fighting.

2. Every syphilitic case definitely exposes many innocent, clean living people to the disease. Sixty cases of fresh syphilis exposed 134 by coitus, 442 by family or boarding-house life, and 651 by occupational association,—1227 people in all.

3. At present no organized effort is being made to round up the source of every case. Out of the sixty sources of this series only two were brought under medical care. These sixty cases infected at least five others, but no effort was made to trace out infections in over five hundred equally good possibilities.

4. Left to themselves, patients make little effort to follow up even the most elementary treatment.

5. Twenty-eight per cent. of the patients entering the clinic with active symptoms of syphilis never return for treatment.

6. Seventy per cent. made less than five visits,—a number insufficient in most cases to relieve the presenting symptoms for which they entered.

7. After the first few months the syphilitic patients as a whole average only 25% of the visits required for minimum efficient treatment.

AN UNDESCRIBED ULNAR NERVE TROUBLE, DUE TO TENSION FROM SCAR, AND ITS CURE.

BY F. J. COTTON, A.M., M.D., F.A.C.S., BOSTON.

FROM observations of the last three years, I have come to regard as a separate class (apparently unrecognized hitherto) lesions of the ulnar nerve at the elbow, due to the intermittent tension produced by elbow motion on a nerve

held rigidly fixed by deep scar. Compression lesions of nerves, associated with fractures, we all recognize,* but this is a different story. Not all these cases have had any fracture at all, and none of them any compression of the nerve, even by scar, so far as could be determined.

The mechanism is purely fixation of the nerve by scar tissue, at the turn of the elbow, where it lies in the epitrochlear groove, or in the inch next below this point. Given a nerve so fixed, it must necessarily happen that flexion of the elbow must pull upon it, and ordinary use of the arm must give intermittent traction on the nerve trunk. The result may be (see cases to follow) in some measure a paresis in the muscles supplied by the nerve, sometimes with marked atrophy in the muscles of the hand, but more particularly, the damage expresses itself in pain; pain radiating from the elbow down to the last two fingers, with numbness to touch in this region; a numbness not usually serious in itself, but important as an indication of real trouble.

Pain and a partial paresis of the intrinsic muscles of the hand, expressed in weakness and clumsiness in executing the finer movements of the fingers, are the factors which principally form the list of complaints from the patient. Relief of this condition is surgical. Just as in the cases of intermittent nerve-pressure symptoms from recurrent luxation of the nerve at the elbow,¹—so here also, the only remedy is removal of the nerve to a more favorable site; we can relieve symptoms by dissecting out the nerve, carrying it forward and imbedding it in loose fat and muscle.

The case histories tell the story fairly well, though the records leave something to be desired.

CASE 1. W. H.; seen Oct. 30, 1912 for Dr. J. B. Murphy of Taunton, Mass. He had an olecranon fracture which is said to have united in the extended position with stiffening of the elbow. The elbow is then said to have been broken up under an anesthetic, and put up at a right angle. When I saw him first, the elbow was rigid at 135 degrees, and very sensitive. There was much muscle atrophy, both above and below the elbow, and considerable stiffness of wrist and finger motion. There had been no recent improvement. I therefore proceeded, Nov. 4, 1912, to mobilize the joint under anesthesia. After this he had the usual treatment by exercises and massage, and did more than usually well, so far as regaining of elbow motion went. By the following spring, he had, by persistent effort aided by massage, regained motion in flexion to about ten degrees beyond a right angle, and something near fifty degrees of extension, with free rotation and free wrist motion, and with only a little stiffness of the fingers. When I next saw him, a little less than a year after his first visit, the condition had changed notably. Motion and strength were improving slowly, but he again had severe pain, no longer general about the

* Such lesions for instance are described in connection with epitrochlear fracture and displacement of the fragment into the joint, giving nerve compression by tension on the intact periosteal attachments. Cotton, "Dislocation and Joint Fractures." Saunders, 1910, p. 218.

¹ Cotton: BOSTON MED. AND SURG. JOUR., Vol. cxliii, p. 111.

joint, but localized to the inner side and radiating down to the last two fingers, increased by use of the arm, intermittent and pretty severe. There was thickening all about the elbow, as there always had been. On examination, there was thickening in the epitrochlear groove; well marked, though reference to the x-rays, previously taken, showed no epitrochlear damage. Closer study of the elbow showed the nerve easily palpable just above the groove, apparently slightly thickened and abnormally sensitive. There was hyperesthesia of the skin area supplied by the ulnar; there was decided loss of power in the hand muscles supplied by the ulnar; movements of the fingers were clumsy; there was some wasting of the intrinsic muscles of the hand. It required little ingenuity to reconstruct the story. The ulnar nerve, embedded in the scar tissue that was all about the joint, was constantly pulled on in the persistent exercises used to limber the joint. The scar tissue had not compressed it at all, but had fixed it. Protected while the arm was stiff, the bound-down nerve was injured by the return of joint motion. I advised operation, but the patient postponed it, in view of pending litigation, and later, depressed over the loss of his suit, declined intervention. He had, however, carried out the lighter régime I had prescribed pending operation, and when I last saw him in March, 1914, the condition was improved as to all nerve symptoms, though by no means normal.

CASE 2. A young boy, seen in consultation. Elbow injury of some months' duration; no fracture. Pain on use of the arm, felt at the elbow, running down to the fourth and fifth fingers; partial loss of power; some atrophy; some filling-up of the epitrochlear groove. Diagnosis made of condition similar to that in Case 1. When operated upon, no nerve compression was found. The nerve was, however, surrounded and held by scar tissue. The surgeon operating considered the exploration negative and did nothing more. Result unknown to me.

CASE 3. I. B.; seen July 31, 1913. G.: 4 of 18; referred to me by Dr. J. H. Sweet, Jr., of Taunton. History of a blow on the right elbow two or three years ago. Lameness of the elbow for a time; then it grew better, but not long after this it grew bad again and from time to time has given much pain and trouble. Sh. has struck the elbow two or three times since then. The elbow shows no sign of previous fracture or luxation. There is, however, distinct thickening in the epitrochlear groove, and the nerve just above this point is sensitive. Pressure on the nerve gives tingling pain down the arm, and sharp flexion of the elbow gives like pain. There is decided clumsiness in motions of the hand, and moderate atrophy of the intrinsic muscles of the hand; there is definite and considerable hyperesthesia over the ulnar area; there is an abnormal smooth look to the hand, and a definite beginning of the "*main en griffe*" attitude. There have been ulcerations about the nails of the last two fingers, obviously "trophic." Operation advised and carried out Aug. 9, 1913. Incision on the inner side of the elbow down onto the ulnar nerve showed it a bit thick above the joint. At a level just above the epicondyle, it disappeared downward into a mass of fairly dense fibrous tissue, to which it was everywhere adherent, though nowhere compressed. The nerve had to be dissected out for over an inch of its length. Below this point, it was free and normal.

The nerve was lifted from its bed, carried well forward of the condyle, and laid in a groove of fat and superficial fascia, which was lightly stitched about it. The wound was then sewed and the arm put up at right angles. The *next day* sensation had become approximately normal, and the fingers were better handled and felt more normal to her. Improvement within three days was startlingly rapid. She went home then, but reported in nine days with an arm and hand normal, except for incomplete repair of muscle atrophy. At forty days she wrote of the arm as normal, except for some tremor of the hand after writing. Three weeks later she fell down stairs, and had some return of pain at the elbow but no motor disturbance. Since then I had no news of her until Dec. 23, 1914, when she wrote in response to my letter of inquiry to the effect that the hand was normal, save for some "hurt" after "using it hard or long." She is in school, writing with this hand. She writes that there have been two "sores," since I saw her, so evidently the operation, while very serviceable, was not an absolute cure.

CASE 4. E. McC., aged 12 years. Came to me, referred by Dr. Charles H. Hare, Jan. 28, 1914. She had broken her right elbow early in September, 1913, in a distant town. The fracture was reduced; put up in splints, then in plaster, to Oct. 12, 1913; later subjected to passive motion of the usual sort, once under an anesthetic. The patient was a tall, slight, but vigorous girl, who showed nothing of interest save the right arm, which was carried, helpless, at her side. The hand was shiny-skinned and smooth; the fingers were held in the *main-en-griffe* attitude. The muscles of the hand innervated by the ulnar nerve were all wasted, and their action weak and uncertain. There was very definite though incomplete sensory loss in the region of the ulnar supply. There was much radiating pain in the ulnar supply, increased by attempted use of the hand. Besides this, however, there was distinct loss of power and a trace of dulling of sensation in all the muscles and the skin surface belonging to median and radial nerves below the elbow. Obviously we were dealing in part with the results of a compression-lesion, due to fracture or reduction, or more likely, to splint-compression. There was, however, distinct thickening about the ulnar nerve in the groove under the epitrochlea. Evidently the fracture had been supracondylar; position and motion at the elbow were excellent. I sent her to Dr. J. W. Courtney for a neurological opinion, and he found the ulnar nerve *most* affected, and advised operation on the chance.

Jan. 30, 1914, I operated. Again the nerve lay in a mass of scar; again it was dissected out, swung forward, and imbedded in a roll of fat, and stitched in place. Within three days, improvement was marked. The hand was warmer; the fingers more responsive; the pains less. Improvement was steady, and as the ulnar nerve supply returned to normal, so also did the muscles of the median and musculo-spiral groups, though these nerves were not touched. June 16, 1914, she was discharged apparently well in every way, as to freedom from pain, and as to muscle function and sensation.

CASE 5. J. W. B.; referred to me by Dr. G. P. Laton of Salem, N. H. Seen July 14, 1914; age, 55; height, 5 feet, 10½ inches; weight, 195 pounds; occupation, carpenter. History of injury was, that in car derailment April 12, 1914, he was thrown fifteen

feet or so, landing on the right side, shoulder, and elbow. He shows a typical picture of subdeltoid bursal adhesions, but also the picture of ulnar nerve involvement; a little dulling of sensation in the last two fingers; muscle action within the ulnar supply very defective; considerable atrophy of muscle in the thenar and hypothenar eminences and in the substance of the palm. There was definite thickening below the epitrochlea; a thickening into which the large but not abnormally thickened or sensitive ulnar nerve disappears. He was treated with baking and massage for three months, without improvement. The notes of the operation are as follows:

Operation Oct. 22, 1914, Scobey Hospital. Incision in right arm, over epitrochlea, and about four inches above and below; ulnar nerve dissected out of its bed. From about half an inch above the epitrochlea, it is normal in appearance and in surroundings; below this point, the nerve is surrounded by a good deal of rather dense scar tissue, making a very definite sheath, out of which the nerve could be lifted only after dissection of adhesions. As usual there was no compression of the nerve at any point, the nerve trunk appearing rather thicker and perhaps a trifle pinker than normal. Nerve carried, after this dissection, clear of the epicondyle in front, and stitched down in a bed of fat, fascia and muscle, coming back to its normal course in a mass of fat above, in the mass of pronator muscle below. Right shoulder manipulated with the breaking of two distinct adhesions, one of which gave way in abduction, and the other in internal rotation. Arm then showed full normal motion; put up in plaster in abduction and in more than the usual outward rotation. Much pain on recovery, in shoulder only.

Dec. 15, 1914. Hand looks entirely normal; use normal. The only thing left in regard to the ulnar nerve is a slight sensitiveness where the nerve crosses the elbow, in its new position, when he tries to use a screw driver hard, and a trace left of the atrophy of the ulnar side of the forearm; a hardly perceptible trace. Muscles of the hand have already regained almost their normal bulk. The shoulder shows slight improvement; less painful, and range of motion is increased a little. I do not think the present condition warrants the advisability of further interference. He is to go ahead with exercises, as usual, but not very strenuously, and is to report about the first of the year.

Jan. 5, 1915. Hand entirely normal, except for a trace of the atrophy of the muscle in the hand; use of it entirely normal. Shoulder progressing in usefulness, but a bit slowly.

CASE 6. F. E. A., seen Oct. 2, 1914, for the Industrial Accident Board. He is a painter and decorator; age 57 years. Medical history of no interest up to an accident sustained Aug. 30, 1913, when he fell with a staging about ten feet, striking his left arm as he fell. He was under hospital treatment for ten days. For over a year, no treatment save massage and liniments, and with no substantial improvement. He complains of loss of power in the hand and of numbness. The left elbow showed slight limitation of extension; marked thickening about the inner side of the elbow. Atrophy of muscles in the ulnar supply not extreme, but they show partial loss of power and there is a very definite clumsiness in executing the finer motions of the hand. There is definite partial anesthesia of the third and fourth fingers. In this case, the thick-

ing at the elbow was so marked that a diagnosis of epitrochlear fracture could be made definitely.

He was later sent to me by Mr. H. Edsall of the General Accident Co., with a view to repairing damage, and on Oct. 24, 1914, I operated at the Scobey Hospital. Incision showed the ulnar nerve embedded below the elbow in a tough fibrous mass, so hard that it "whistled" when cut. This extended for a little distance above and for about three-fourths of an inch below the epitrochlea. The nerve was solidly adherent all through this region, but when dissected out, was not itself in any way abnormal. The nerve in this region and for three inches above the elbow, though normal, was a large ulnar nerve. Dissection carried down into the flexor muscle mass. After the nerve had been cut out of the groove at the back of the condyle, investigation showed the fragment felt at examination to lie directly below the epicondyle, and between it and the place where the nerve lay was only fibrous tissue; a piece of the bone, one-half to five-eighths of an inch, was removed without opening the joint. The nerve was transplanted forward into a very satisfactory bed of fat, covering it on both sides. Arm put up at right angles in sling.

Nov. 4, 1914. Still shows a trace of the muscle atrophy previously present, but muscle power everywhere is good; can spread his fingers perfectly well, etc. The partial anesthesia of which he complained has entirely disappeared; feeling the same in these two fingers as in the others; as he expresses it "life has come back into the hand." Now shows nothing excepting the scar, and the slight thickening in the bend of the elbow, where the fact was rolled up to make a bed for the nerve.

When last seen, Nov. 23, 1914, he showed a hand in all respects normal save for a trace of the muscle atrophy. Sensation was perfect and the coördination of the finer movements of the hand entirely restored.

CASE 7. J. S., teamster, aged 46 years; seen Nov. 20, 1914, for Mr. H. Edsall. He says that on the day after Thanksgiving, 1913, he was sitting on his team, when the horses started suddenly. He lost his balance and fell on his right elbow. Went to the City Hospital, and was treated with the arm in a sling in a flexed position for three months, according to him. An x-ray was taken. Later, was treated at Tewksbury, and here also an x-ray was taken. He proved to be a vigorous sort of a man, looking less than his age. The right elbow showed limitation of about 25 degrees in extension; a little less in flexion and rotation. The limitation was purely a loss of mobility, not painful. (Later examination of the early x-rays at the Boston City Hospital showed nothing but a moderate articular thickening of the sort one finds in laboring men of middle age.) More interesting was the loss of power in the muscles of the hand, and the trace of anesthesia in the region supplied by the ulnar nerve. There was also some stiffening of the fingers, due in my opinion, partly, like the elbow stiffness, to overlong fixation; partly to defective power in the muscles that should have been limbering up the fingers during the past year. The hand muscles were a good deal wasted. The condition had been stationary for some months at least. Below and behind the elbow, in this case as in the others, was a very definite thickening into which the nerve disappeared downward. I advised operation and operated Dec. 10, 1914. Incision just behind epicondyle, five inches long. Ulnar nerve found firmly bound to a point above the epicondyle;

very firmly adherent in dense scar mass which was in this instance not very thick but rigid and tough. Same operation done as in the other cases, imbedding the nerve in fat, in this instance for the entire length of its new course. Nerve in this case could not be carried quite as far forward as the others, but well clear of the condyle. The motion of the elbow was no freer under ether, and attempts at stretching it met with definite fibrous resistance, not to be overcome. Usual dressing.

In this case also there was within three days a subjective improvement and within a week the anesthesia was all gone and the fingers could be handled better.

Jan. 5, 1915, examination showed definite improvement in regard to the atrophy of muscles; firmer grasp; good, practically perfect, coördination in the finer movements of the hand; and most encouraging of all, real improvement in the range of flexion of the fingers. The condition at the elbow, as regards motion, does not show any change.

Jan. 19, 1915. No pain; very definite improvement in motion of fingers and in wrist motion. Fingers handled much better.

Despite minor differences, these cases clearly belong in a class by themselves,—a class not apparently recognized in the previous literature. The conditions found at operation, together with the surprisingly abrupt relief of anesthesia (and of pain, in case it had been present previously) and the very rapid improvement in motor function, with prompt rebuilding of atrophic muscle, all lead me to class these as lesions due to the constant irritation of the fixed nerve by flexion and extension movements, rather than as compression lesions.

Perhaps my having seen so many of these curious cases in a short period may be only a chance, but I cannot help suspecting that this lesion may often have been unnoticed as well as undescribed. The resultant disability is not inconsiderable, and it behooves us to keep an eye open for these cases—if for no other reason, because they are so easily cured, and so quickly.

SOME NERVOUS AFFECTIONS IN WHICH MASSAGE DESERVES MORE FRE- QUENT USE.*

By J. W. COURTNEY, M.D., BOSTON.

THAT massage is an important therapeutic factor has long since been an established fact. Whether or not it holds a position as prominent as it deserves in the therapy of nervous disorders is debatable. The question is one which I shall, in this brief communication, not attempt to settle. I shall content myself with pointing out to you certain nervous disorders in which massage in some form might with benefit be more frequently employed.

In the rather large group of myospasms there

* Paper read before the Massachusetts Therapeutic Massage Association, January 12, 1915.

are two varieties peculiarly rebellious to drug treatment. One of these you probably know under the name of wry-neck, the other as writer's cramp—a disorder by no means confined to penmen, but found also among typists and among artisans whose occupations demand an incessant abuse of the coördinated movement of the smaller muscles of fingers and hands.

In the wry-neck variety of myospasm I am thoroughly satisfied that, in most cases, the seat of the trouble is to be found in the cortex of the brain. I hold this belief for two reasons: first, because of the absolute inefficacy of local surgery as a curative measure; and second, because of the relief sometimes obtained in the spasmodic cases through the effect produced upon the mind by a supposed operation. In two cases of very long standing which came under my observation a few years ago, Dr. Bottomley, at my suggestion, excised fairly large pieces of the nerves supplying the muscles involved in the spasm. The operation was painstaking and thorough in both cases. In neither case was any permanent benefit derived.

Sedative and anti-spasmodic drugs are likewise of little value in these cases, so that both surgery and drugs offer but slight hope of relief to the unfortunate sufferer whose plight is almost inexpressible. Massage, systematic and persistent, resistive motion and muscle stretching, on the other hand, are of genuine and lasting value in the condition in question. Their effects are not immediate—indeed, it is not to be expected that they should be; but the ultimate relief from them is far more tangible and permanent than that obtained in any other way. Another distinct advantage possessed by the manipulative method in these cases is to be found on the psychic side. The patient feels that something definite and tangible is being done for him, and his courage to make the fight for recovery is sustained thereby. Those of you who have had occasion to treat cases of spasmodic wry-neck will at once recognize the importance of this aspect of the treatment. Without the encouragement thus derived, the patient is very apt to develop a melancholy which leads to the taking of dangerous drugs or to actual suicide.

In writer's cramp and other vocational myospasms, the curative value of massage and gymnastic exercise is overlooked with regrettable frequency by members of the medical profession. In such cases we are dealing, as I have already said, with an abuse of function of certain finely coördinated groups of muscles, with the result that when the endeavor is made to bring the abused muscles into function, the overwrought nerves which control the desired coördinated muscular activity lose their controlling power; and the end result is spasm of the muscles called upon, pain and other evidence of disordered sensibility.

No cure is to be expected in such cases so long as the occupation which brings about the

spasm and accompanying discomfort is persisted in. But treatment by local rest and tonics seldom, in itself, suffices to bring about a cure. What is needed above all things is massage, usually in the form of deep manipulation. This, however, should be applied to the muscles which are the antagonists of those in spasm rather than to the spasmodic group itself. The rationale of this treatment is to be found in the increase in vigor and resisting power which, by the treatment, is imparted to the resisting muscles.

The next class of cases in which I have finally come to the belief that massage will prove its efficiency, if it is given a fair trial, is that of so-called cerebral contusion. Cerebral contusion of the modern medical nomenclature is identical with what, in former times, was commonly called "concussion of the brain." The old notion was that when a blow of moderate severity was inflicted upon the skull, its contents were shaken up like so many dried peas in a pod, and that the symptoms produced were due to a temporary disarrangement of the nervous elements of which the brain is composed. Modern pathologic research has shown conclusively that this notion is entirely erroneous. As a matter of fact, when a wounding force of moderate severity is applied to the skull, its immediate effects are primarily made manifest in the brain bloodvessels. These vessels are supplied with sympathetic nerves which afford them an independent power of contraction and dilatation. Under the shock of an applied force the sympathetic or vasomotor nerves in question are immediately put out of function, and circulation within the brain ceases to a greater or lesser extent. With this cessation in vascular function two things immediately happen—first, a clotting of the blood in certain capillaries; and second, a leakage through the vessel walls of the watery contents of the blood. If only a small area of the brain is involved in this morbid process, the circulation finally rights itself and the watery effusion is absorbed. If, on the other hand, the brain area involved is extensive and the amount of fluid poured out into the brain substance great, the burden of absorption and removal of this fluid thrown upon the great venous pathways from the brain is so overwhelming that these conduits fail in their function, the brain becomes waterlogged and death ensues.

Up to the present time the measures adopted by the surgeon in the above-mentioned situation have been inadequate to cope with the effused death-dealing fluid with entire success, and, as I have already said, I cannot help feeling that in massage we have an important adjunct to the surgeon's endeavors. A stroking or *effleurage* of the neck tends, as you very well know, to a rapid depletion of the jugular veins and creates a sort of suction. This suction would, in my opinion, strongly favor the evacuation of effused fluid from the brain itself and to a remarkable degree the drainage established by the trephining operation of the surgeon. It is my hope

that in the future the masseur may have increasing opportunities to prove the worth of his manipulations in this class of cases.

Owing to the fact that most organic diseases of the brain and spinal cord are incurable, the physicians in charge of cases representing these diseases are too frequently wont to limit their therapeutic endeavors to the administration of either iodide of potash or of that other standby of neurologic therapy—strychnine. More often than not, under these circumstances, the iodide is useless and the strychnine positively harmful in that, by its stimulating action, it serves to increase the painful muscular contractures accompanying the disease under treatment.

In the majority of cases where the lateral columns of the spinal cord are involved, massage and passive motion are the only therapeutic agents really indicated. It matters little whether the primary focus of disease is in the brain or in the cord itself; the resultant damage is weakness and stiffness—sometimes amounting to actual contracture—of the affected limbs. And to these disabilities a local sluggishness of circulation is not infrequently added by reason of a concomitant disturbance of what we may term the check-rein nerves of the skin blood vessels—the vasomotors.

The value of massage in such conditions is twofold: It acts centripetally, stimulating the tissues about the central focus of the disease, and peripherally, it improves circulation, retards muscular wasting with its consequent weakness, and prevents severe deformities.

There are many who scoff at any measure designed to combat the ravages of organic disease of unknown or doubtful origin in the central nervous system, but after fairly long experience with this form of disease I can frankly say that I do not share their pessimism. I have just spoken of the value of massage in lateral column disorders and will now speak in turn of what may be expected from it in affections of those remaining portions of the cord which are of the greatest and best known functional importance,—the anterior gray horns and the posterior columns.

In that disease of the anterior horns, known as progressive muscular atrophy, I cannot truthfully say that I have found massage of any particular value, but in what we may term the late regressive stages of infantile paralysis—a disease of this same region—there is no question of its efficacy. In fact, I consider it of as great importance in the maintenance of muscular nutrition and the correction of paralytic deformities as any other measure that has ever been adopted.

To obtain the best results from it, however, its use must be extended over a long period of time.

Locomotor ataxia represents the most commonly encountered disease of the last-remaining portion of the spinal cord above mentioned, and in it massage—either alone or in combination with reeducation in coördinative movements of affected muscles—serves a useful purpose. Here

again its action is twofold, as in the case of lateral column degeneration, in the sense that its beneficial effects are felt both peripherally and centrally, although it does not have identical conditions to combat.

In Parkinson's disease (*paralysis agitans*) I have found massage very useful in allaying the feeling of tension, stiffness and awkwardness that so often accompanies the shaking. Here, however, only the gentlest kneading and the mildest sort of passive motion should be applied.

I am sorry that I have not had the time to specifically indicate the other forms of organic disease of the central nervous system in which the employment of the therapeutic agent in question is attended with undoubted benefit. I will say, however, that it should be more frequently used in all cases of central disease accompanied by deformities of joints and in the majority of those associated with atrophy. In the latter group I make exception of syringomyelia as well as of the so-called progressive muscular atrophy, in which diseases I have found it of doubtful value only.

It is hardly relevant in this paper to speak of the use of massage in cases of peripheral nerve suture because its employment in such cases is the rule rather than the exception. But I cannot refrain from touching upon this subject in order to emphasize one very practical point, namely, the absolute necessity for patient perseverance. Even where early end-to-end suture of a divided nerve-trunk is made, the process of union is, as a rule, tediously slow and inexplicably discouraging. Months may elapse before massage appears to make any satisfactory impression upon the muscles that have been rendered wasted and inert by the severance of their nutrient nerve. But persistent massage acting centripetally will ultimately bring about most gratifying results in the way of improved nutrition and motion in the affected muscles. In cases where surgical union of a divided nerve is delayed for some time, the problem of the masseur is distinctly greater and he must bring into his handling of the case a fund of patience that is well-nigh inexhaustible.

With the above digression I come to a final group of morbid nervous phenomena in which the use of massage is by no means unknown, but in which it might, with great profit, be more frequently employed. I refer to phenomena which represent a state of pathologic exhaustion of the nervous centres and which are classified under our present rather unsatisfactory nomenclature as symptom-complexes of the so-called psychoneuroses.

As you perfectly well know, the patient with hysteria or neurasthenia is, with annoying frequency, looked upon by physician and layman alike as the victim of nothing more nor less than his own wilfully morbid imagination. Such a tenet on the part of a layman, ignorant as he is of all knowledge of anatomy, physiology and hygiene, is hardly to be wondered at. When,

on the other hand, a physician conducts his treatment of the pitiable sufferer from exhausted nerve centres on the basis of the same tenet, the *raison d'être* of this treatment is akin to that of the exorcism of mediaeval times.

As a plain matter of fact the problem of etiology in exhausted nervous centres is far too deep and subtle to be disposed of in any offhand way. Into this problem I shall not here delve, but shall confine myself to the consideration of those clinical manifestations of the exhaustion in which the use of massage is indicated much more often than it is actually employed.

Nervous exhaustion is characterized by morbid emotional states, by a prompt fatigability of motor neurons, by perverted sensibility of the most varied form and by curious morbid fluctuations in the activities of that delicate mechanism known as the great sympathetic nervous system.

In the severe cases the feeling of fatigue is so marked and so constant that it is with the greatest difficulty that the sufferer is able to use his upper extremities for more than a few minutes at a time or to drag his weary legs for even the shortest distance. The advice often given to such a person by the misguided medical man is to take more exercise, and if this advice is followed, it invariably leads to such an increase in the exhaustion that existence is rendered almost unendurable.

What such a person really needs is the very gentle stimulation of motor neurones and voluntary muscles, which skilfully applied massage so marvelously well supplies. Under such manipulation the unhealthy tension of over-tired motor nerves is relieved, the muscles lose their vice-like feeling of tension, the skin circulation is equalized in the various regions of body and extremities and the emotional tone is altered for the time being from one of irritability, anxiety and depression to one of pleasant languor.

Under the same sort of manipulation the tender and at times extremely painful spine is restored to normal feeling. I have been particularly struck by the analgesic action of carefully graduated massage in this condition; indeed, I have frequently seen spines so exquisitely tender at the outset that the lightest *effleurage* of a gentle operator was intolerable, gradually become, under this treatment, so free from morbid sensitiveness that even the heaviest handling was grateful rather than otherwise.

We come, finally, to a consideration of the disturbances which arise through the faulty working of the great sympathetic system in states of nervous exhaustion. It has always seemed to me curious that Nature has put such a burden of function upon this, the most delicate part of the dynamo that runs the human machine. But such is the fact.

At times it governs, at other times it is governed by, our emotional life. It regulates the amount of blood that at any one time is in a particular part of the brain. It controls respiration, the beat of the heart, digestion, glandular

secretion in general, the secretion and excretion of urine, the peristaltic action of the bowels, the menstrual function and the surface circulation—in a word, it holds the sceptre over a very large territory in the human economy. Hence, when it is brought by exhaustion to a state of irritability it produces the over-activity in brain circulation which underlies insomnia, the cold, mottled and moist extremities, the suffocated feelings, the palpitations, the sluggish and painful digestion, the constipation, the increased or diminished urinary output, and the painful, delayed and scanty menstruation so often encountered in the victims of the so-called psychoneuroses.

Here is a pathologic problem with which no system of therapy that does not give a prominent place to massage can possibly hope to cope successfully. By massage, in the form of *effleurage*, we can deplete the over-filled vessels of the brain and bring about the much-needed mental peace and refreshing sleep. By the same agent we can equalize surface circulation and surface temperature throughout the body and limbs; we can stimulate sluggish peristalsis and relieve the pain caused by the distention of retained flatus; we can prevent the sagging of the stomach and intestines due to atony and, in certain cases, we can—I feel confident—bring about a return to normal of the menstrual function.

There is probably nothing in this very brief communication that was not known to each and every one of you long since; but it was not my purpose to bring to your notice those forms of nervous disorder in whose treatment massage has not as yet proved its practical efficacy; on the contrary, my aim was to stimulate a greater tendency to its employment in cases in which its therapeutic value is practically indisputable. This I have not done as thoroughly as I should like, but as thoroughly as my limited leisure permitted. I ask your indulgence for my shortcomings.

Medical Progress.

EIGHTH REPORT OF PROGRESS IN ORTHOPAEDIC SURGERY.*

BY ROBERT B. OSGOOD, M.D.; ROBERT SOUTTER, M.D.; HERMANN BUCHOLZ, M.D.; HARRY C. LOW, M.D.; AND MURRAY S. DANFORTH, M.D., BOSTON.

(Concluded from page 452.)

RICKETS. OSTEOMALACIA. CHONDRODYSTROPHIA FETALIS. OSTEogenesis IMPERFECTA.

Weiss³⁰ reports a series of cases of rickets, some mild and some severe, in which there was a very marked improvement in their condition under the administration of tablets of the extract of the hypophysis. This improvement occurred in from six to ten weeks.

Cavazzani³¹ had observed great benefit follow

the administration of epinephrin in three cases of osteomalacia. The disease occurred in women who had borne one or more children. In the first case it was begun about a week after the first symptoms, which had come on acutely a few days after delivery. The treatment was promptly effectual. In the second case the osteomalacia had developed not long after delivery, but two months had elapsed before treatment was instituted. The treatment was not kept up regularly and the results were less striking. In the third case, although the disease had existed for a long time and there were irreparable lesions, a very marked improvement took place.

Wagner³², in reporting a case of chondrodystrophy fetalis transmitted from mother to child, calls attention to the influence of heredity and the fact that the usual transmission is from father to child. The author, while admitting that there is no conclusive evidence of specific disturbance of function of any of the glands of internal secretion, believes that there is probably a hypersecretion of the reproductive glands which causes an abnormal development of muscles and genitalia. An histological study reveals irregular columnæ of cartilage cells at the epiphyseal line, the cells being pushed apart, especially at the periphery, as if the periosteum had been driven into the cartilage. Wagner thinks that this abnormality of enchondral bone formation is associated with increased tension in the direction of the long axis of the bone by the hypertrophied muscles, resulting in the micro-melia.

Bookman³³ has accepted an opportunity to study the metabolism in a case of osteogenesis imperfecta for a considerable period of time, especially with reference to the calcium retention and output. His three conclusions are as follows: 1. Calcium retention may be much below normal. 2. During the course of the disease it varies widely. 3. Cod-liver oil and phosphorus, and more especially calcium lactate increase the calcium retention. Bookman compares his observations with the earlier work of Bamberg and Hulchinsky³⁴, who after a study of their own cases and a review of the literature, conclude that osteogenesis imperfecta (Vrolik) and osteopsathyrosis idiopathica (Lobstein) present very similar clinical pictures. They believe that fifty per cent. of the cases of osteopsathyrosis, which condition comes on at varying periods after birth, are hereditary. In the earlier congenital osteogenesis imperfecta they find that heredity plays no part. A histological study shows, in contradistinction to the picture of chondrodystrophy fetalis, aplasia of the compact tissue and spongy substance of the diaphysis and epiphysis with normal growth of cartilage, resulting in the development of slender bones, with little spongy substance and weak compact tissue. They consider that disturbance of function and defective formation of the periosteum is the direct cause of these changes. Both early and late

forms show the same changes. In regard to the calcium metabolism, their work seems to show that the disease is not caused by a loss of calcium, but by the incomplete rudimentary formation of the bones with irregular distribution of calcium. They agree with Bookman that the retention of calcium can be increased by phosphorized cod liver oil. The prognosis in the forms occurring before birth is bad. Of 31 cases collected, only three survived. In the late forms it is good, in 105 cases there being no death from the disease.

SCOLIOSIS.

In a series of 22 cases of scoliosis, not selected, but taking all in which good x-rays were obtained, in the Orthopaedic Clinic of the Massachusetts General Hospital, Adams³⁵ has studied the abnormalities in the vertebral column. Two cases showed abnormalities of the dorsal vertebrae, and nineteen, abnormalities of the low lumbar or sacral segments. The only remaining case was one of scoliosis, following poliomyelitis, in which there was no bony abnormality.

[Ed. Note.—Such findings in x-rays made as a routine in a scoliosis clinic, show the need of careful study of the lumbo-sacral region in all cases of lateral curvature, for upon the cause must depend to some extent the details of treatment, and also upon the cause must depend the prognosis as to our ability to maintain a correction once obtained. If we can become convinced that these abnormalities represent the cause of the deformity, we are at once faced by the question as to whether in many cases at least we should not attempt to correct the static influence of the deformity by operation, either before or after the correction of the scoliosis. This may furnish a further field for bone grafting and spinal surgery in general. The suggestiveness of this paper of Adams is enhanced by the reports which come in from various sources, in which the authors from their observations feel still uncertain as to the permanence of the results obtained by the forcible methods of Abbott and others.]

JOINT SURGERY.

Murphy³⁶ has written a valuable paper on the technic of arthroplastic operations for bony and fibrous ankylosis of the temporomandibular articulation. He believes the cause to be either an infection or a trauma transmitted from the chin. The differential diagnosis as to which side of the jaw is affected may be extremely difficult. In the intra-articular ankyloses there is sometimes a little motion on the unaffected side. An important point is that the face on the affected side is full and round and apparently normal in appearance, while on the opposite or unaffected side it is flattened and deformed. The chin is always more or less retracted and deviates toward the ankylosed side. The muscles on the affected side are always more atrophied. The most important points in his technic are an

L-shaped incision in front of the ear and along the zygoma. No attempt is made to remove the head of the bone from the glenoid cavity on account of the danger of penetrating the skull. The pedicle flap of fat and fascia is lifted from the surface of the temporal muscle and turned downward. A wooden wedge is inserted between the jaws on the affected side. Mastication is begun in two weeks. He reports nine cases with good results in eight.

W. L. and C. P. Brown³⁷ describe an operation for arthroplasty of the shoulder joint, and while they have had only one case, the result was excellent and the procedure is surely ingenious. The joint is exposed by an anterior incision. The pectoralis major tendon is divided at the humerus and the inner fibres of the deltoid are also divided. The short head of the biceps is cut across about 4½ inches below the glenoid and the muscle with pedicle attached is turned into the glenoid and fastened by sutures. The pectoralis major is sutured if possible and the arm put up in abduction.

Payr's³⁸ experience in arthroplastic operations has been large and his constant attempts to improve his technic and study his results make the report of his further experience of great value. His first cases are now about four years old. He is still impressed with the importance of the removal of the synovia and fibrous cartilage, and if possible of the whole capsule as well. His experiments seem to show that the final tissue covering the bone ends resembles that of tendon sheaths. He has never seen new cartilage formation, and the bursa-like nearthrosis is a unique structure. He finds that the ends of the bones adapt themselves to the mechanism of movement, the spongiosa becoming more dense and a sort of cortical bone forming. As to the indications, Payr considers that it is essential that the operation should be deferred until long after all signs of active inflammation have subsided. He believes this cannot be emphasized too much. Some of his knees have been done in two stages, the first, the mobilization of the patella, and later, after exercise of the quadriceps, the main joint has been reshaped. He approaches the joint by two lateral incisions, having abandoned Kirschner's method of trapezoidal resection of the tibial tubercle, because it was noticed that the healing of the bone was not good. He has evidently had difficulty, as have the Editors, with the occurrence of bony spurs on the posterior edge of the tibia and femur. He believes this may be avoided by removing the periosteum from this region as exactly as possible. He begins massage of the muscles early and gentle movements of the joint in two or three weeks. He employs traction sufficient to separate the bones as much as he considers necessary. In the knee he considers 90 to 100° of motion all that is desirable. In bony ankylosis of the hip he considers a pseudarthrosis of the upper end of the femur may be the best procedure. He reports 11 cases of knee

joints, as 2 bad, 2 good, 7 very good; 3 cases of hip joints as 1 bad, 2 very good; 3 cases of elbow joints, as 1 good, 2 very good; 2 cases of finger joints as successful; 1 case of shoulder joint as unsuccessful.

BONE SURGERY.

Lewis³⁹ summarizes the results of his experimental work in bone transplantation as follows: The cortex, without periosteum, endosteum, or marrow, will remain alive and proliferate when small bits are imbedded in muscle tissue. Direct contact with living bone is unnecessary. Large pieces of bone transplanted onto live bone, remain alive. Bony growth may fill in without the aid of a periosteal or bony bridge, and strips of fascia may take the place of the periosteum as a limiting and nutritional membrane. In one case three inches of the excised shaft where the periosteum had been scraped away, was regenerated in this way. At autopsy nine weeks later, moderately firm bony callus was present, and the fascia had fused with the periosteum further up the shaft with an almost indefinable dividing line.

Bond⁴⁰, in reporting two cases of successful transplantation of the fibula to replace the tibia in which there had been satisfactory increase in size as far as thickening was concerned, but not sufficient growth in length, discusses the controlling factors in this growth. There seems to be little reason to doubt that imperfect epiphyseal function is the cause of defective growth in length. He believes after consideration of various theories that the increase in thickness is simply in response to the necessity of function, and that we may expect these changes in transplants in other parts of the body, although we are unable to describe the process of cell reproduction which brings this about.

MarcoZZi⁴¹ recommends a mixture of equal parts of the phosphate and carbonate of lime as a filling in bone cavities. It is easily sterilized, readily but not quickly absorbed, has a marked affinity for bone, and stimulates osteogenesis. He reports good results.

FRACTURES AND DISLOCATIONS.

Marsiglia⁴² reports experiments undertaken on dogs to determine the effects of injections of emulsions of the hypophysis of calves after fracture. It was found in the dogs studied that the consolidation of the fractures was very much delayed and that the dogs suffered markedly from toxemia, loss in weight, strength, etc.

Tanton⁴³ believes that the gravity of fractures of the coracoid process depends less on the break than on the force necessary to cause the lesion. Malgaigne had six deaths in six cases. With dislocation of the coracoid process inward there is likely to be contusion of the bundles of the axillary nerves, causing complete paralysis of the upper arm, forearm, and hand. This occur-

rence is due to the violence rather than to the fracture. Secondary nervous complications often arise from exuberant overgrowth at the point of fracture. In five out of six cases reported by Dr. Guelt only fibrous union occurred. With displacement of a coracoid process there may be a functional impotence evidenced by a lack of power in the forward motions of the arm. Treatment should consist in immobilization for twelve to fourteen days in forced adduction with a flexed forearm and the elbow elevated. Where there are persistent symptoms from exuberant overgrowth this should be removed.

Saar⁴⁴ has treated six cases of old fractures of the lower end of the humerus which had healed with great backward displacement and complete or nearly complete loss of function of the elbow. In all these cases he mobilized the lower fragment by carefully dissecting away all scar tissue. In some of the cases the lower fragment lay entirely free. He then corrected the position and retained the bone by mortising it to the shaft. In no cases did necrosis occur, and the results in all his cases were good, in two of them normal motion being obtained.

Anzilotti⁴⁵, from a careful study of two cases of forward dislocation of the head of the radius, one recent and one of a year's duration, concludes that in a recent case one should attempt reduction without open operation, but in case of failure to reduce or to maintain the reduction one should make an incision down to the head and replace it, after removing any obstacle. In old dislocations it is necessary to open the joint, remove any obstacles, and if possible replace the head. If this is found impossible one should remove just enough of the head to permit reduction.

Walbaum⁴⁶ reports two cases of the rare fracture of the lesser trochanter, of which, according to his statement, only 12 cases have heretofore been published. In both cases the fracture occurred in connection with running fast; one patient feeling the tear as he abruptly stopped. The symptoms are pain and limping in walking, tenderness over the lesser trochanter, free passive motion, but pain in active motion of the hip joint. Ludloff's sign, the inability to lift the leg from lying position, was positive in one case, but negative in the other. The author believes, therefore, that in the latter case only a part of the lesser trochanter was torn off.

Balthazard⁴⁷, adds another to the cases on record in which after a fall, the patient complaining only of vague pains in the lumbar region, an actual fracture of the spine had occurred. He walked home after the fall, but by the sixth month he complained of girdle pains and there was a hump in the dorso lumbar region. He died from an intercurrent disease, and necropsy revealed that the spine had been fractured, the body of one of the vertebrae had been crushed, and the transverse lamellae broken, but the spinous processes were intact.

[Ed. Note.—We believe that fractures of the spine are much more common than we have been accustomed to consider them. They are associated in our minds with severe immediate symptoms, usually of cord pressure and kyphos, whereas frequently the immediate symptoms are very slight and no kyphos is present. The serious nature of the injury is revealed later when pressure symptoms begin. We feel sure that all injuries of the spine should have an x-ray examination and that when a fracture is found, immobilization should be advised for several months.]

Albee⁴⁸ advocates in certain fresh fractures inlaying a bone graft and fastening it with bone autoplastie pegs. With accurately adjusted twin saws a piece of bone is cut out of the long fragment about five inches in length and a small piece, 2½ inches in length and of exactly the same width and exactly opposite the trough in the long fragment, is cut from the short fragment. From this smaller piece, bone pegs are fashioned by a dowelling machine. The longer piece is inserted in the short fragment and extends an equal distance into the long fragment and is retained by the bone pegs driven through drill holes.

Davidson⁴⁹ reports excellent results in six cases of fracture treated by the introduction of autoplastie bone pegs made from the tibia. These were introduced into the medullary canal in all cases except in fracture of the neck of the femur, in which a canal was made through the trochanter.

[Ed. Note.—It is quite evident to the Editors that a course in carpentry will soon be a necessary part of the education of every well equipped surgeon.]

MISCELLANEOUS.

Brandes⁵⁰ has studied the time of appearance and the character of bone atrophy caused by disease. He chose the os calcis of rabbits as most suited to his experiments and observed the changes in it as a result of resecting a portion of the tendo Achilles. An atrophy involving both the spongy and compact bone occurred in one week. The tibia and the anterior bones of the foot were involved also. When the function was only partially taken away, as by a plaster cast, an atrophy began very early and was directly proportional to the completeness of the lack of use. From these experiments the author concludes, as did Legg as the result of his similar experiments, that the atrophy seen in disease is the result only of the disuse, and not characteristic of any special disease,—for example, tuberculosis.

A type of enteric fever due to the bacillus Columbensis was first described by Castellan⁵¹ in 1905. Certain cultural characteristics and sugar differentiate this organism from others in the paratyphoid group. He describes a case

of this type of fever, in which there were sinuses in the arm, persisting for over a year, from which spicules of bone were discharged, and from which cultures of the *B. Columbensis* were isolated. This apparently represented a perios-titis due to one of the organisms of the typhoid group. The infection is always mild, persistent, and runs a subacute course.

Dehon and Hertz⁵² give the details in fourteen cases of angiosclerotic dystasia or intermittent claudication, and call attention to the fact that syphilis was known in half of them. This large percentage suggests the importance of at least tentative treatment for syphilis in all cases of obliterating arteritis of the legs. One of their patients improved remarkably under specific treatment and the Wassermann reaction became negative. Some with known syphilis had a negative reaction. In some with known syphilis, the intermittent claudication was not benefited in the least by the specific treatment. Tobacco and alcohol seemed to be contributing factors in some of the patients, possibly outweighing in importance the syphilis in these cases. They urge that if any signs of tabes or leukoplakia are present there should be a trial of specific treatment in every case of intermittent claudication, even if there is nothing else to suggest syphilis and the Wassermann reaction proves negative at the first test.

Bailey⁵³ reports four cases of spinal cord tumor and calls attention to the fact that in these tumors pain may be absent, or present only slightly and at intervals. Also that the presence or absence of pain is not of value in determining whether the tumor be extra- or intra-medullary. He says, "We shall have to take the same position in regard to spinal cord tumors as we have taken for years in regard to tabes, that is, that pains may be absent in a disease which is usually highly painful, and that the absence of it in any case presenting other sufficient symptoms does not vitiate the diagnosis."

Goldthwait⁵⁴ has written a suggestive article intended to reach the lay public on the effects of habits of posture on health.

[Ed. Note.—It is undoubtedly true that faulty posture maintained in industrial life becomes a fixed habit and that careless lack of attention also allows a poor posture to become an habitual position of a physically weak individual. These conditions may predispose to various chronic diseases. Although it is quite true that many persons live to be three score years and ten, work hard, and "never have a sick day," and yet are round shouldered, with sagging abdomen, and pronated feet, the efficiency of these individuals must be lessened by these factors. Our attention needs to be called to these matters, but let us not stop there. Proper posture should be a study in every school, ranking with other lessons, and its acquirement made essential to promotion. Gymnasia, with instructors trained in the methods of inducing proper posture must be

developed for general use, if we are going to reach more people than those few to whom we can say, "Sit up straight."]

An article by Lovett⁵⁵ on "The Causes and Treatment of Chronic Backache, with a Consideration of the Diagnosis of Sacro-iliac Relaxation" should be generally read, as the expression of opinion of an eminent orthopaedic surgeon who has given much thought to the subject. Leaving out of consideration the backaches due to tuberculosis, organic nervous disease, and spinal fractures, he considers the common causes are: 1. Pelvic conditions. 2. Traumatisms. 3. Arthritis. 4. Defective balance. Sacro-iliac strain or relaxation as an entity, he considers very rare, believing that the backache when located in this region may be attributed to strain upon the muscles, attachments and ligaments in this region, causing a condition of hypersensitivity and tenderness in which the sacroiliac ligaments are in some cases involved. He believes that the measures often employed to support the sacroiliac joints, such as adhesive plaster and belts, are entirely insufficient to really hold the articulation, and are successful only when they give support to strained muscles or help to maintain a proper balance. The most useful methods of treatment he considers to be: 1. Measures to obtain proper balance, such as corsets, etc. 2. Proper shoes and sometimes supports for the back. 3. Later exercises to develop the musculature.

[Ed. Note.—It is not clear from the article what the author considers the cause of the common sciatic and other nerve root pain which so commonly accompanies both the attitudinal, the traumatic, and the arthritic low backaches. These are frequently relieved by protecting the sacroiliac joints and these alone, by such a procedure as the Italian laborer has learned to adopt, when if hard digging is to be done he shifts his belt from his waist to below the level of his anterior superior spines. He does not know that the difference of a few inches in the circular construction makes the difference as to whether the sacro-iliac joints are sprung apart by pressure applied at the level of the crests of the ilia or held together by pressure exerted in the sulcus between the trochanter and the anterior superior spines, but such is the fact and he does know that his back does not ache when he is thus protected. The author is quite right in saying that any actual displacement of the sacrum downwards is unlikely and possible only as a result of very great trauma. None of the anatomists or clinicians who have carefully studied the movements of the sacrum have maintained that this occurred. (Goldthwait: BOSTON MEDICAL AND SURGICAL JOURNAL, May 25 and June 1, 1905. Bouvarre et Bfie: *La Presse Medicale*, Aug. 9, 1899. Herman Myer: *Archiv. für Anatomie*, 1878, p. 1. L. Dieulafe: *Bibliographie Anatomique Supplement*, 1904, p. 109.) Nevertheless, the rotation of the sacrum on its horizontal axis through the second sacral ver-

tebra and slight displacements or subluxations beyond of this normal arc of motion, which the author does not mention, are quite common, we believe, and demonstrable both to palpation and also in good stereoscopic x-ray plates. We cannot explain relief of nerve root pain, when the sacroiliac joints are protected by the theory of relief of strain on the ligaments and muscle attachment of the low back, nor can we explain thus the quick relief which is often dramatic, which sometimes follows manipulation of the joints, either with or without an anesthetic. Muscle attachment and ligamentous strain from faulty attitude and balance are surely a very common cause of backache, but there will, in our opinion, be left many cases not explainable on this theory alone, and in these we believe that lesions of the sacroiliac joints and strains in which abnormalities of the articular and transverse processes of the fifth lumbar are present, will be found not infrequently.]

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Book Reviews.

A Text-Book of the Diseases of the Nose and Throat. By JONATHAN WRIGHT, M.D., Director of the Department of the Laboratories of the New York Post-Graduate Medical School and Hospital; and HARMON SMITH, M.D., Surgeon of the Throat Department of the Manhattan Eye, Ear, Nose and Throat Hospital; Clinical Professor of Laryngology and Rhinology, Cornell University Medical School. Illustrated with 313 engravings and 14 plates. Philadelphia and New York: Lea and Febiger. 1914.

This is a new text-book of 650 pages. It is stated in the preface that "the exceptional feature in the book is the emphasis laid upon the etiology and pathology of disease" and that "much of this work rests on original investigation in the laboratory and clinic." One of the authors is an investigator and a philosopher, whose opinion in pathological problems has long been sought, and who in addition to his other writing has given us a classical history of laryngology. The other is a well-known clinician and operator. They have worked together so that there are no abrupt lines of demarcation between the academic and the practical portions of the text. The first chapter gives briefly the various methods of examination. The next on the external nose includes the results of the long experience of one of the authors with the injection of paraffin. The description of the minute anatomy, both normal and pathological, of the internal nose and also of the pharynx and larynx, is one of the striking features of the book. Another, which will undoubtedly lead to its wide use for reference, is the description of the various neoplasms, not too technical, but given by the hand of a master. The selection and description of operations on the accessory sinuses and nasal septum is good and clear. In the chapter on neuroses of the nose is included hay fever, which is apparently looked upon as largely due to a yielding on the part of over-sensitive persons to insignificant irritations. It is disappointing that the large amount of study which has recently been given to the theory of anaphylactic reaction from the different proteids should not be taken seriously. The important subject of the borderline between normal and pathological adenoids and tonsils is judicially discussed and various methods of operating described. A valuable chapter, often omitted from text-books, is one on buccal lesions, with which the specialist is often called upon to deal. As a whole the book is a worthy addition to our list of text-books on the subject, and justifies its promise to embody original points in etiology and pathology.

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NEW AND NON-OFFICIAL REMEDIES, 1915.

THE 1915 edition of *New and Non-official Remedies*, published by the American Medical Association, has recently been issued. This little work,* which is prepared by the Council on Chemistry and Pharmacy of the Medical Association, is not as well known to, or as frequently consulted by, the profession as it should be.

As the name implies, the book deals with drugs which have recently come into use and with those which are not yet contained in the United States Pharmacopoeia. Its main purpose is to give physicians a truthful account of the chemistry, properties, actions and, so far as these have been determined, the therapeutic use of the drugs discussed. As a source of information on such subjects, it should largely replace the trade circulars of manufacturers, from

* Copies of "New and Nonofficial Remedies" may be obtained at cost price, postpaid (50 cents for paper-bound, \$1.00 cloth-bound), from the American Medical Association, 535 North Dearborn Street, Chicago, and also through dealers in medical books.

which so many of the less critical members of the profession derive their knowledge of the more recently introduced remedies.

As examples of the drugs discussed in this edition, may be mentioned salvarsan, emetine, theobromine and theophyllin (and the various proprietary preparations of these, such as diuretin and theocin), novocaine, preparations of the pituitary gland, various vaccines and sera, etc. The list is not limited to substances used for therapeutic purposes; it discusses also the most important chemicals and re-agents recently introduced for use in diagnosis, such as phenolsulphonphthalein, the Noguchi, Abderhalden and von Pirquet tests.

A very useful feature of the work is the fact that the names of the manufacturers who make such preparations and who have satisfied the Council that their products are as represented, are given. It may not be generally known that the American Medical Association maintains in Chicago an exceptionally well equipped chemical laboratory for the purpose of examining new drugs; this laboratory is probably the best source of trustworthy information in the world on such subjects. The fact that so many physicians still derive so much of their information on these subjects from commercial circulars or retail men, in preference to *New and Non-official Remedies*, is highly discreditable to the profession. An examination of the reports of the chemical laboratory of the American Medical Association, or those of the United States Public Health Service, of the records of convictions under the National Pure Drug and Insecticide laws will show how little reliance can be placed upon the claims of many manufacturers. And yet most physicians constantly prescribe and hospitals constantly buy, at exorbitant prices, simple Pharmacopoeia drugs under proprietary names, simply because the manufacturers say, or insinuate, that their products are superior to the U. S. P. preparations, although the quality of the latter is under the jurisdiction of the United States as well as of the state governments. Why do physicians who accept such statements hesitate to accept other statements of these same manufacturers—those concerning the value of their various pastes for the checking of cancer, of various toxins for pneumonia, etc., as well as the out and out "patent" medicines (hair growers, "manhood restorers," etc.) which the same firms prepare for the use of the laity? It

may well be that the future historian of medicine will find this an essentially darker period in some important respects than that of a century ago, when James Jackson and John C. Warren knew enough about the drugs they used to write a pharmacopoeia for the Massachusetts Medical Society.

All drugs are admitted to *New and Non-official Remedies* provided they meet certain simple requirements—requirements based upon principles universally accepted, but unfortunately not adhered to by the medical profession; they must be non-secret, exact information as to composition must be given, grossly exaggerated claims as to usefulness or safety must not be made. Powerful drugs, the use of which by the laity might lead to harm, either direct or indirect, must not, according to the rules governing admission to the book, be advertised in a way to invite self-medication. With these simple restrictions, the reasonableness of which is self-evident, all new drugs of promise are eligible for admission. Physicians should regard with suspicion all proprietary preparations which are not included.

The reason why the products of some manufacturers are not in *New and Non-official Remedies* is that these firms are not dealing fairly with the profession or the public.

Another feature of the work is that emphasis is laid upon the true chemical names of the drugs. Many physicians will find that they are using proprietary names and so helping create monopolies in certain official drugs, as well as in certain chemical compounds; the use of various proprietary names for the same official drug (as in the case of hexamethylenamine, for example) often leads to the greatest confusion.

HEALTH ASPECTS OF SCHOOL LUNCHES.

THE medical profession is to be credited with initiating the movement to feed children at school. Its beginning, in England, can be traced to a memorandum issued many years ago, by the director-general of the Army Medical Service which followed the wholesale rejection of recruits because of physical disability. An investigation showed that the conditions responsible

for this physical decadence were directly attributable to poverty, that this in turn was due to the change brought about by the rapid rise of industrialism following the adoption of labor-saving machinery, and that in consequence of the prevailing poverty the children were being reared as weaklings, incapable of resisting disease and largely impervious to education. As a measure of relief for this deplorable situation the inquisitorial council recommended a school lunch service for needy children, to be maintained at the public expense. An examination of over 330,000 children (one-third of the school population of the city) by the medical inspectors of the New York Health Department in 1913 disclosed some 14,000 cases of malnutrition; and, on the assumption that the same ratio of this condition is to be found in the rest, there would be more than 40,000 children in the schools whose health is impaired owing to a malnourished system. It has been ascertained that in Cincinnati, of 36,438 children examined, 1619 were suffering from malnutrition; in Cleveland, of 61,578, 671; in Newark, N. J., of 27,971, 940; in Rochester, N. Y., of 18,497, 945; and in Worcester, Mass., of 18,342, 389.

While, of course, the provision of a suitable meal at noon is inadequate to overcome such malnutrition, the school lunch service is undoubtedly a palliative measure of great practical service, and one which can be made productive of a widespread influence for good. In the latest *Monthly Bulletin* of the New York City Department of Health there is published a valuable contribution on this subject by Edward F. Brown, executive secretary of the school lunch committee of the Association for Improving the Condition of the Poor. From this it is learned that the New York School Lunch Committee was organized in 1907 for the following purposes: 1. The provision of nourishing lunches on a self-supporting basis for public school children. 2. Special observation of children whose physical condition is such as to give evidence of lack of proper nourishment, in order to determine the underlying causes by a study of their homes and environment. An extension of this aim requires that these selected cases be followed up, to the end that the proper agency may be apprised and appropriate action taken. 3. The formation of special classes of mothers for instruction in the proper care of children, and particularly those suffering from poor nourishment. It will thus

be seen that the work of this committee is very much more comprehensive than the mere providing of nourishing noonday lunches. The need for a school lunch system, as Mr. Brown says, ought really to be regarded as a symptom of a serious social disorder. The necessity of feeding children at school usually arises from either a demoralized home, where the housewife has to work out, indifference of the housewife, or ignorance of home economics. The service of a noon meal is at best to be considered inadequate for a number of reasons, among which may be mentioned the following: Behind each child in need of such a service is a home lacking the facilities for proper feeding; for such a child the need is just as great for its other meals and for feeding on non-school days and in the summer recess; the presence in the family of children of preschool age; the fact that any desirable effect resulting from the scientific feeding of the child at one meal time at school is likely to be destroyed by the kind of food it gets at home at the other meals. Properly, therefore, the feeding of children should be made part of a much larger social program. At the present time there are in New York twenty schools, registering 32,000 pupils, where the lunch system is operated. The need for such a service was naturally most urgent in districts where the people were impoverished, where mothers worked in factories by day, and where the children depended for food on the few pennies which purchased candy from the vendors about schoolhouses. An experiment was tried in the equipment of a kitchen in a school building, where soup, sandwiches, puddings and cocoa were provided at the rate of one cent a portion—the child being required to purchase first a bowl of hot soup. The caloric aggregates of some of the typical trays of food provided, the price of none of which exceeds a total of three cents, are given, and these are samples of them:—

Vegetable soup.....	85.00	Bean soup.....	111.27
Egg sandwich.....	236.00	Bread, two slices.	200.00
Rice pudding.....	108.76	Prunes.....	180.00
	<hr/> 429.76		<hr/> 491.27

Aside from its other advantages, the school lunch system affords an admirable opportunity to teach the children the science of feeding, including the purchase, preparation and hygiene of food. Fundamentally, the work is devoid of any mark of poor relief. During the last school term 1,249,489 portions of food were sold; for

which the children paid \$12,494.89. The service was not quite self-supporting, for a deficit equal to a little over one-third of a cent per portion was incurred, and this was made up by a benevolent lady.

Naturally, in any scheme for feeding large groups of children, where the prime object is the rearing of a vigorous race, a scientific basis is essential. The working force of the committee is headed by a dietitian, who is responsible for the character of the food and service, and the principles on which food is selected are: (1) nutritiveness, (2) palatability, (3) purity, (4) seasonability, (5) inoffensiveness to racial or religious preferences, (6) similarity to home food, (7) balance in accordance with food principles. When the committee is assured that an article of diet meets with these requirements, a sample order of the raw product is secured, and it is then submitted to three tests: chemical, bacteriological and food value. Coöperation with the health department is stated to have yielded the most encouraging results. Analyses have been made by it, and also by some of the university laboratories. Furthermore, health authorities in other places have always aided when asked to inspect the manufactories in their communities. Where there is every indication that the product itself is pure, the place where the food is manufactured is inspected, and, in purchasing, preference is given to firms maintaining the best conditions. The social value of encouraging trade where decent conditions of work and welfare prevail is, it is felt, not only a just recognition of good public service, but a rebuke to the manufacturer who thrives on adulteration, over-work and under-pay; and here one recognizes another measure in the interest of public health, for in the degree that we demand livable conditions of labor shall we secure a diminution of incapacity, sickness and death. Where foods are found to contain harmful matter, or where the conditions of manufacture or sale are unhygienic, information is laid before the health authorities for action. This usually prevents the further distribution of a product which is likely to cause injury, and thus there is an educational advantage in this system which can scarcely be overestimated. An additional precaution to ensure the purity of the food dispensed is the careful scanning of the lists of convicted food adulterers prepared weekly by the health department. Of course, scrupulous care is taken to have the kitchen and service equipment entirely hygienic,

and in order to prevent the possibility of disease transmission in the preparation and handling of food, the committee had the health department make a thorough physical examination of all the school lunch employees, and also of a hundred children who assist in the service. The argument has often been advanced that the feeding of children at school causes shiftless parents to shirk their just share of responsibility in the nurture of their offspring; but this has not been found to be the case. On the contrary, the school lunch employees, coming in contact with the parents in the districts, are often consulted regarding what foods to prepare for children at home, and how to prepare them. Certainly, the New York School Lunch Committee is to be congratulated on the valuable and far-reaching work it is accomplishing.

SYPHILIS.

WE wish to direct the attention of every reader of these pages, whether man or woman, physician or layman, to the article by Dr. J. Harper Blaisdell which is printed in this issue, under the title of "The Menace of Syphilis to the Clean Living Public."

There is no doubt that many persons contract syphilis innocently and that many more are exposed to this danger. It has been pointed out that even those who lead the most sheltered lives are not free from this menace.

Must the innocent always be thus endangered, and how great is the risk?

Before answering these questions a store of accurate information must be collected.

Several years ago, as stated by Dr. Blaisdell, New York City made syphilis a reportable disease with this end in view. Statistics as to prevalence, distribution, and source of infection in a community must prepare the way for effective action.

Is it known how many syphilitics there are in our community, how many of them daily endanger their associates, or how many persons with lesions on the hands are engaged in the preparation of food?

These things cannot be known until all cases of syphilis are reported promptly to the local health authorities.

Let us as physicians each and all prepare to do our parts in the campaign already being waged against syphilis, the tragic consequences of which we know full well.



THE QUESTION OF QUARANTINE TRANSFER.

IN previous issues of the JOURNAL we have, from time to time, commented editorially on the relative merits of federal and local control of quarantine service and, after discussion, have advocated the transfer of the Boston Quarantine Station from municipal to national administration. On March 23 the Boston City Council committee on ordinances reported favorably on the pending plan for effecting such a transfer, and it is expected that the necessary ordinance will ultimately be adopted by the council. At a meeting of the committee, the Boston Chamber of Commerce submitted a further report in which its previous opposition to the transfer was largely withdrawn. This report was based on a previous report by Mr. Robert Luce, chairman of a special committee of the Chamber, to whom the subject was referred. Mr. Luce's report expressed confidence that the federal government, in the event of transfer can be relied upon to provide adequate accommodations for detained immigrants and that the officials will afford the work as prompt and efficient a service as that which it at present enjoys. The final report of the Chamber further calls attention to the high local cost of maintaining quarantine service and the desirability of uniformity in quarantine administration from the point of view both of public health and of the commercial and shipping interests. The report continues as follows:—

"Furthermore, there appears to be reasonable ground for the expectation that in the near future it will be necessary to build a new detention hospital at Gallop's Island or elsewhere, and it is averred that the cost thereof may run as high as \$250,000. We were told it would be possible at present in case of emergency, to house nearly 1000 persons under roofs on the island. In the summer more could be maintained in tents, but it seems clear that provision ought to be made for winter conditions.

"If the United States takes over the station, it will proceed at once to make repairs under an

annual appropriation available for the service, and will proceed at once to acquire from Congress funds available for any new construction necessary.

"Manifestly it is important to the shipping interests that the quarantine station be adequately provided with personnel and equipment to handle vessels with the greatest possible expedition in ordinary times, and the least possible detention of the ship itself in case infection is found aboard. An outbreak of plague here would paralyze commerce by reason of attempts at self-protection on the part of other ports.

"Nothing indicates that our local quarantine service is not effective. On the contrary, it is praised. Yet whatever can be done to make it still more effective and to guard against every possible contingency would seem to be the part of prudence.

"The chief weakness of the present arrangement appears to be the usual weakness that follows a division of authority. Under normal conditions, all goes well. When the emergency comes and the second authority steps in, then come uncertainty, misunderstanding, friction, delay, economic loss, danger to the community. Unified administration lessens these chances of injury, and in that particular matter brings about certain specific advantages."

As the result of this reconciliation of the Chamber of Commerce to the proposed quarantine measure it is earnestly to be hoped that the transfer of the Boston Quarantine Service from local to federal control may soon be effected.



MISCELLANEOUS MATTERS OF MEDICAL LEGISLATION.

BEFORE the Massachusetts General Court, several measures of medical legislation upon which comment has been made in previous issues of the JOURNAL, have recently been acted upon as follows. The anti-vaccination bill was given leave to withdraw. The anti-vivisection bill was defeated by the House. A bill was reported by the committee on counties authorizing Barnstable County to construct and maintain a hospital for tuberculates. The public health committee reported favorably the bill requiring applicants for registration in medicine to be graduates from a medical school approved by the State Board of Registration in Medicine, or to possess an equivalent training.

The text of this important bill (House No. 745) is as follows:—

Section three of chapter seventy-six of the Revised Laws is hereby amended by inserting after the word "character," in the fifth line, the words:—and a graduate of a legally incorporated school of medicine,—so as to read as follows:—
Section 3. Applications for registration shall be made upon blanks to be furnished by the board, and shall be signed and sworn to by the applicants. Each applicant for registration shall furnish satisfactory proof that he is twenty-one years of age or over and of good moral character and a graduate of a legally incorporated school of medicine, and, upon payment of a fee of twenty dollars, shall be examined by said board. If he is found by four or more members thereof to be twenty-one years of age or over, of good moral character and qualified, he shall be registered as a qualified physician and shall receive a certificate thereof signed by the chairman and secretary. An applicant who fails to pass an examination satisfactory to the board, and is therefore refused registration, shall be entitled within one year after such refusal to a reexamination at a meeting of the board called for the examination of applicants, without payment of an additional fee; but two such reexaminations shall exhaust his privilege under his original application. Said board, after hearing, may by unanimous vote revoke any certificate issued by it and cancel the registration of any physician who has been convicted of a felony or of any crime in the practice of his profession. All fees received by the board shall, once each month, be paid by its secretary into the treasury of the commonwealth.

The committee on public health reported adversely on the bill and recommendation submitted by the State Board of Registration of Nurses. This recommendation contained in the fifth annual report of the board, was as follows:—

"The board recommends the passage of an amendment to the present act which will provide for the registration of two classes of nurses. The title R.N., meaning registered nurse, authorized for nurses who are graduates of approved training schools, and who can meet the requirements of an examination which would determine the fitness of a nurse to do any work a nurse might be called upon to do, and another title, that of H.N., meaning household nurse. Such nurses, with the title H.N., would, under this act, be permitted to take care of ordinary cases of illness, but could not nurse major surgical cases."

The defeat of the anti-vaccination and anti-vivisection measures is, of course, cause of congratulation to the medical profession. It is perhaps best that the bill on the registration of nurses should fail to pass at this time. It may

be hoped that that on the registration of physicians will have a more favorable fate, and physicians who favor it should write to their representatives and personally attend any further hearings upon the subject.

MEDICAL NOTES.

JORDAN MEMORIAL SANATORIUM.—The recently published second annual report of the Jordan Memorial Sanatorium, River Glade, New Brunswick, for the year ended October 31, 1914, gives an interesting record of work accomplished in the cure and arrest of tuberculosis. The number of patients admitted during the year was 87. Of this number six were discharged as cured, 13 as apparently arrested and 36 as improved.

POLIOMYELITIS IN DORSETSHIRE.—In a recent issue of *Public Health*, Dr. Rory McLaren, public health officer of Dorsetshire, England, records an acute epidemic of poliomyelitis in Beaminster, a town of 1700 inhabitants, eight miles from the English Channel. In this agricultural community the first case of infantile paralysis appeared on August 2, 1914. Sixteen other cases followed within a month, all within a mile and a half of the center of the village. Six of the cases died, five survived with serious paralysis and six recovered with slight disability. This typical severe outbreak conforms definitely with the infectious character of the disease and the probable method of its transmission by an intermediate insect host.

ADIRONDACK COTTAGE SANITARIUM.—The thirtieth annual report of the Adirondack Cottage Sanitarium, Saranac Lake, N. Y., contains a carefully detailed and interesting record of the work of that institution. Of the 229 patients treated during the year, 20.5% were discharged apparently cured, 43.7% were discharged with disease arrested, and 11% improved. The total contributions for the year amounted to \$63,620.67; contributions to the general fund amounted to \$14,432.71; to the x-ray account, \$3,100.00.

INCREASING DEATH-RATE FROM ORGANIC DISEASE.—The Life Extension Institute of New York has recently issued in pamphlet form an address by its president, Elmer E. Rittenhouse, entitled "America's Pressing Mortality Problem." Accompanying the text is a series of charts showing graphically the rapid increase of deaths from apoplexy, kidney and urinary disease and cardiae and circulatory disease in the United States and a corresponding decrease of

deaths from these causes in England and Wales.

In concluding his discussion of these facts, the author states, as his solution of this problem, that education in individual hygiene is the remedy for these alarming conditions and the ultimate means by which length and efficiency of life may be attained.

TYPHUS IN SERBIA.—It is reported by the war relief committee of the Rockefeller Foundation, on its return from a tour of inspection through Serbia, that typhus, typhoid fever, cholera, smallpox, diphtheria, scarlet fever, and recurrent fever are all existing in epidemic form. Typhus, the most deadly of these, already has caused the death of 60 out of 400 native doctors of the country. The foreign Red Cross units have suffered great losses. Two American units and one British have been compelled to suspend their regular work because of typhus. Nine American nurses and two physicians have contracted the disease. The Serbians assert that Austrian prisoners of war who were permitted to wander over the country, introduced the disease and infected the population.

ANNUAL REPORT OF THE CRAIG COLONY FOR EPILEPTICS.—In presenting their annual report to the Legislature of the State of New York, the board of managers of the Craig Colony for Epileptics, Sonymea, N. Y., make the following statement:—

"On September 30, 1913, the census was males, 763; and females, 664, total 1,427. There were admitted during the year 125 males, 86 females; total 211. There were discharged during the year 136 males and 81 females, a total of 217, making the census on September 30, 1914, 752 males and 669 females; total 1,421. From the time of the vaccination against typhoid fever of all employees and patients in the infirmary in 1912, no cases of this disease developed until in September, 1914, when three cases were diagnosed. It is believed that a carrier was the source of infection. The number of patients in the colony having tuberculosis approximates 200."

As is usual the report contains an interesting record of autopsies performed on 87 patients.

NEBRASKA ORTHOPEDIC HOSPITAL.—The seventh biennial report of the Nebraska State Board of Charities and Correction contains an interesting account of the Orthopedic Hospital maintained by that state. Since its establishment in 1905, it has treated nearly 1,000 patients. A new building for its use is in process of completion and when finished will increase the capacity of the hospital to 150 patients and make it one of the largest strictly orthopedic hospitals in this country. Its record for the two years beginning November 30, 1912 is 690 patients received, 279 discharged as cured, 258 discharged as benefited, 30 discharged as not improved and 16 deaths.

ANNUAL REPORT OF THE BATTLE CREEK SANITARIUM.—The recently issued report of the Battle Creek Sanitarium, Battle Creek, Mich., for the year 1913 shows a steadily increasing number of patients attending this institution and a constant broadening of the field of work here attempted. Since its incorporation in 1876, the number of patients treated has risen from 182 in that year to 5,693 in 1913. Improvements involving the expenditure of more than \$50,000 were made during the year. An advance in the work of the institution was initiated by the appointing of a committee to organize and equip a children's ward. In 1913 the number of patients aged 15 years or under was 176, the average number being 17.6.

In the first week of January, 1914, a Race Betterment Conference was held at the sanitarium, the expenses of the movement being borne by the Race Betterment Foundation, a philanthropic association which is closely allied to the sanitarium and which undertakes the support of numerous lines of philanthropic work directly or indirectly connected with it.

EUROPEAN WAR NOTES.—On March 27, the total of the New York Belgian relief fund amounted to \$995,579.59; the American Jewish relief fund to \$579,996.53; the New York Red Cross fund to \$475,350.34; the New York Committee of Mercy fund to \$137,523.71; the New York Polish relief fund to \$28,916.92; and the New York Serbian relief fund to \$25,217.00.

On March 28 the total of the New England Belgian relief fund amounted to \$238,503.92; the Massachusetts Red Cross fund to \$116,495.40; the Boston branch of the American Ambulance Hospital fund to \$56,348.25; the Boston Polish relief fund to \$38,775.87; and the Boston branch of the Prince of Wales fund to \$12,500.00.

BOSTON AND NEW ENGLAND.

EUGENIC LAW IN VERMONT.—Report from Montpelier, Vermont, states that on March 22 the Legislature enacted the so-called eugenic marriage law providing a fine of \$500. for any person who marries without a physician's certificate of physical and mental fitness.

MASSACHUSETTS DISTRICT HEALTH OFFICERS.—Notice was issued by the Massachusetts State Department of Health on March 23 that the eight new district health officers recently appointed by Dr. McLaughlin are to begin their duties April 1.

MILK AND BABY HYGIENE ASSOCIATION.—The sixth annual meeting of the Boston Milk and Baby Hygiene Association was held in this city on March 23 under the presidency of Dr. Charles W. Eliot. The principal address was by Dr. S. Josephine Baker on "The Community and the Baby." The annual report of the director

showed that during the past year 4,097 babies were treated at the 12 milk stations maintained by the association, whose nurses made also 50,275 visits to patients in the latter's homes.

ORGANIZATION OF THE EAST BOSTON MEDICAL ASSOCIATION.—On March 19, a number of physicians of East Boston met and organized the East Boston Medical Association. The following officers were elected: Dr. Frank Tilton, president; Dr. Robert Barney, vice-president; Dr. A. L. McLaren, treasurer, and Dr. J. D. Taylor, secretary.

EPIZOÖTIC OF FOOT AND MOUTH DISEASE.—At the Westboro Lyman School 61 hogs, valued at \$877, were found to be infected with foot and mouth disease following an attack of hog cholera, and were slaughtered. A herd of 70 cows kept near the hogs showed no signs of the disease.

MASSACHUSETTS HOMEOPATHIC HOSPITAL.—The recently published annual report of the Massachusetts Homeopathic Hospital states that during the year ended December 31, 1914, 23,260 patients were treated in the various departments of the institution, an increase of 808 over the previous year. In the wards of the Main Hospital there were treated 6,533 patients as compared with 6,508 a year ago. At the Haynes Memorial there were treated 838 patients as compared with 455 patients a year ago. The follow up system of the hospital has been enlarged and a social service worker engaged. The methods of fire protection over the hospital have been improved, \$3,442.89 being expended for this purpose. The report also contains a picture of the new maternity and out-patient building in process of erection, which will greatly facilitate the work of these departments.

LAWRENCE GENERAL HOSPITAL.—The thirty-ninth annual report of the Lawrence General Hospital, Lawrence Mass., conducted by the Ladies' Union Charitable Society of that city, for the year ended September 30, 1914, shows that institution to be in a commendable state of efficiency. The total number of patients admitted to the hospital during this period was 1833. The out-patient department treated 1679 patients, and the orthopedic department, 558. The maximum number of patients in any one day was 93 and the minimum 46.

On October 8, 1914, Sarah Frances Shackford, the last survivor of the charter members of the Ladies' Union Charitable Society, died at her home, at the age of 75. She was at that time president of the society, having served continuously, in one office or another, since the organization of the society in 1875.

The hospital has been enlarged by the addition of a children's ward, the gift of Mr. Joseph Shattuck, and plans are drawn up for another building to be used as a nurses' home.

NEW ENGLAND BAPTIST HOSPITAL.—The twenty-first annual report of the New England Baptist Hospital, Boston, for the year ended December 31, 1914, shows that during the year, 712 patients were admitted. Of this number 105 received medical treatment, 499 surgical treatment and 70 were maternity cases.

The president of the corporation states in his report:

"The year just closed has been one of the most interesting in our history from every point of consideration. Our service to the community has been the largest, our receipts from all sources have been very materially increased, the amount of free service has been much larger than any year, with one exception, and the number of major surgical cases has been more than doubled, as compared with former years, with a very gratifying low percentage of deaths."

CASES OF INFECTIOUS DISEASES reported to the Boston Board of Health for the week ending March 23, 1915: Diphtheria, 66, of which 3 were non-resident; scarlatina, 48, of which 7 were non-resident; typhoid fever, 6, of which 1 was non-resident; measles, 177, of which 2 were non-resident; tuberculosis, 53, of which 3 were non-resident. The death-rate of the reported deaths for the week was 19.12.

the Channel of three hundred of these women, to be as picked a body as was possible under the present tight circumstances, the idea being to distribute them about among the military hospitals in little groups of four or five. The results of this move might really have been foreseen! The French voluntary organizations of amateur nurses,—who after all had been doing their very best, naturally,—were stung to the quick at this aspersion on their capabilities; they "saw red," as the expression goes, and in many places made the life of the English invaders a mild little kind of sheol, in which line of action they were often backed up by the medical attendants. So now the plan has been modified, and the endeavor is being made to place these nurses in groups by themselves, in such a was as practically to give them entire charge of the patients of whom they have the care. Among the first of these nurses to come over was an old friend of mine, a very bright woman of wide experience, and the following is the letter she wrote me soon after reaching her post. Comment on it is unnecessary. I will merely add that another nurse, to whom I showed this letter, tells me that she has seen a typhoid hospital of *nearly one thousand* cases, with conditions similar to these. I certainly am devoutly thankful that I have no son in this war. If I had, I might, perhaps, stand with fortitude his being killed in battle for his country's liberation; but what would not be bearable would be to have his life played with in this fashion.

"I am afraid you would be quite overcome by the awfulness of this place; it is a veritable pest-house we have got to, this time. There are eighty patients in all, and oh! what a desperate state they are in! This is only a temporary hospital, formerly a school, and the sick men are distributed about in different rooms. Up to the time of our coming there were only two real orderlies for medicine, temperature, hypodermics and cupping, two for giving the lotions, a sort of cross between a tub and a sponge, two for carrying up the food, and one on at night. You can half imagine the state we found the poor souls in. Up to three weeks ago the wounded were brought here; but now it is only for the worst cases of typhoid. There is a pump in the courtyard, and some warm water in the kitchen stove at times; but there is not a tap in the place, and every drop of water must be carried upstairs. The carrying would not be so bad, if we only had something to carry in; there is only one jug in the whole place ($2\frac{1}{2}$ litres), and although we ask, and are promised, we have not received anything further yet except five hygienic pails (there was only one when we arrived). There are just five basins for washing the patients,—five for eighty men! And not a pillow in the whole hospital, only little, holsters. There were only eight splitting-ups,—the men have been using the floor up to now; but by agitating we have been supplied with twenty condensed milk cans for this use. There is only one chair in each ward, and no bed-tables; so mugs, cups, everything goes on the floor, which is black, never scrubbed, only sprinkled with carbolic, as they do in the Paris Metro, and then swept with a wet broom, thereby grinding the dirt into the grain of the wood. The windows do not appear to have been cleaned since the building was put up, some fifty years ago. There is no place yet provided for disinfecting linen. I keep begging for formol, but apparently it is considered too costly. The mattresses are all old ones from the barracks, straw and lumps of wadding, all more than filthy and smelling frightfully, as you will understand when I tell you that they do not own such a thing as a rubber drawsheet. The men seem so surprised when we want to change a sheet after an involuntary motion! The patients have been allowed to walk out of the rooms to the w. c., whether tottering and delirious or not, and when they are to have a lotion the orderlies have been making them leave their beds naked, go to the middle of the ward, and lay themselves down on a

Correspondence.

PARIS LETTER.

(From Our Special Correspondent.)

TYPHOID FEVER IN THE WESTERN AREA OF WAR.

PARIS, March 13, 1915.

Mr. Editor: In casting about in my mind for a heading to this letter I remembered the title of a book said to have once really existed: "English As She Is Spoke." So I propose to place as a superscription to the following remarkable document the delightfully ungrammatical sentence: "Typhoid fever as she should not be took-care-of!"

In my last letter I referred to the universal dissatisfaction manifested here as regards the care of the sick and wounded from the fighting-lines. The main defence of the Service de Santé is that they have been utterly swamped by the number of men to be handled, which has proved to be in the proportion of five to two, as regards the number they expected to handle and for which they had made provision. I also cited the somewhat peppery remark which a deputy claimed to have made to the director of this health service. Today I think I will give, nearly in full, a letter received from one of the temporary hospitals, to show that, perhaps, this deputy's sentiments were not altogether unjustified. When the war had been going on a few months, and the authorities saw that their antiquated nursing-system was giving such deplorable results, they decided to incorporate quite a body of properly-trained nurses from England into their sanitary formations, in the hope in this manner to leaven the entire lump of dough; arrangements were consequently made for the gradual moving across

cold wet sheet arranged over an India-rubber sheet on an ordinary stretcher. The lotions are ordered two, three or four times a day, and never at night, regardless of temperature, which is never taken oftener than twice a day. Nearly every patient gets quinine, and most of them are quite deaf from it. B-naphthol, aspirin, and cinchona wine are the regulation remedies, together with two kinds of hypodermics, caffeine and camphorated oil,—a man up and about may be ordered a hypo of camphorated oil!

"When we first got here we all of us stayed on duty all night, to try and clean up the patients and make their beds. The men say one and all that they have not been washed for three weeks, or had their beds made. You cannot imagine what an awful state their mouths are in. I came on regular night duty on Sunday, and began with a death, a poor lad of only eighteen. I may say that the doctor is never to be sent for; he just comes once or twice a day, and lives in the town. This poor boy died in full view of all the patients, such a thing as a screen being unheard-of here, and after he died two orderlies just carried him away to the attic. As they were doing this a delirious man left his bed and was fumbling at the door, so that the orderlies had to put down the stretcher with the body on the landing and secure the wanderer. In the meantime several other patients were going to and from the w. c. and had to step over the corpse. It is all so gruesome, and so frightfully unhealthy,—little better than a pesthouse. The w. c. is on each landing, in full view, and consists of a wine-vat cut in half with a board across for a seat; they are, of course, in almost constant requisition!

"I cannot possibly continue for long in these conditions, with only one orderly to help me at night. We are also always short of disinfectant. If you could see me in this ward, with ten delirious cases, others coughing all the time, and others muttering! One feature about these men is curious, there seem to be so few bad hemorrhages; I wonder whether that can depend on the fact that many of them were inoculated on reaching the hospital? The majority are very serious cases, with bronchopneumonia, or pleurisy."

"S."

• • •

FIELD SURGERY ON THE POLISH BATTLEFRONT.*

KEMBLING, December 4, 1914.

Russian Poland near Lodz.

I am still alive in spite of being now four months in war. You can hardly imagine how sorry I was when I understood at that ominous Saturday, 1st of August, that I could not see you any more. For years and months I was looking forward with joy and happiness to seeing you at my house, and to having you for several days in Berlin, and then you were in Berlin and I could not even see you. The four months following that day were the most eventful of my life. Right away I was called to the front and was happy to follow and to obey this call. At first for about two weeks I was captain-surgeon in an old and famous dragoon regiment in Allenstein. There it was my duty to examine all the young and old fellows who wished to enter voluntary service. The court of the barracks was day by day crowded with men, not only with working men, but mostly with men of the upper classes. The enthusiasm was simply tremendous. It was impossible to take them all, although they insisted and begged, considering it as the greatest misfortune of their lives that they had not been able to be enlisted. Besides this business of examining I had to vaccinate all the soldiers of my regiment. You can imagine that this kind of work did not please me for a long time and after trying a

while I got another kind of work more like my specialty. I became captain-surgeon at a field hospital. Now I could work surgically and soon I went to the battle fields. My first experiences were at the little battle of Bialla, near the Russian frontier; they concerned, however, a very small number of wounded men, Germans and Russians. However, a few weeks later during the last week of August, I had the great luck of participating at the great battle of Tannenberg. I do not know how much you are informed of the events of this war, but surely you will know this tremendous historical event, one of the greatest victories of this war, where a relatively small German army captured a much bigger Russian army. Two weeks afterward I took part in the second great East Prussian battle "at the Masurian Lakes." The numbers of wounded men, both German and Russian, were overwhelming. We worked for weeks, day and night, at our field hospital. Besides this I had the special order after Tannenberg to take charge of one big Russian field hospital captured at Hohenstein. The work of a field surgeon is nowadays quite different from what it was formerly. Whoever expects to do great operations, amputations, excisions, etc., will be greatly disappointed. Conservative surgery is triumphing. I mean, of course, right away on the field and at the field hospital. Well adapted bandages, good fixation of the damaged joints and bones, plasters, and splints,—that is the point of field surgery, and not only of surgery of the extremities, but also in abdominal surgery it is much better not to operate in the field but later in the so-called "reserve hospitals," which are located near the boundary in a rather safe region. Therefore, again transportation plays an eminent rôle in modern war and motor cars are of tremendous use for war-sanitary-purposes. I presume that the triumph of conservative surgery in this war will be of eminent advantage for orthopedic surgery after the war. The two above-mentioned battles liberated East Prussia entirely from the Russian invasion, at least for several weeks and our army was free to enter Poland. The first expedition into Poland in which I participated went over Czenstochava, Radow, until very near Varsovie, capital of Poland. It was a march of tremendous laboriousness, the weather being rainy and cold during all the days, the streets of Poland being in an unheard-of-condition, our horses being in morasses sometimes over their knees, and still we did not lose a single horse or wagon of our field hospital, and reached Warnbau or Varsovie, i.e. the neighborhood of this city, in less than twelve days, marching day and night with very little rest.

Nobody knows yet, with surety, what the idea of this quick march was and what the task of the return march has been which was made soon afterward. Surely it was not a flight, for we marched out of Poland more slowly than we marched towards Varsovie and surely the whole business was intended by our chief generals. For as soon as we entered Poland and we progressed, I had the exact order to send the wounded back to the frontier and not to treat them here. And every treatment had to be as fast as possible. For instance, in Grojed, a little town near Varsovie, I had to bandage 450 men in one day and night, in order to fit them for transportation. The whole month of October we spent in Poland. As soon as we returned to Germany orders came for a second invasion into Poland from another point of the frontier. And now for three weeks our troops stand near Lodz, after having had some victorious battles on their way from Germany. We expect that these battles now will bring us the decision not only of the war against Russia, but of the entire war. It is true the Russians are much more numerous than we are, but this fact so far during the war was not of so great importance, the Russians thought. To my mind it shows enough the minor quality of the Russian army, that they were not able to carry war for any length of time into Germany. The point is,—and that I have a hundred proofs for,—the Russian soldier has

* Letter from Dr. M. Böhm, former director of the Medico-Mechanical Department of the Massachusetts General Hospital, to Dr. R. B. Osgood, of Boston.

no idea what he is fighting for. You ask the captured and wounded,—and I have seen thousands,—whether they would like to return to their army if I dismiss them and they all will beg you to keep them. They all have a kind of stupid energy, but no intelligent enthusiasm whatsoever. Lately, during the last fights, the wounded Russians were often drunk. It seems that alcohol is used to drive them into the front. I personally believe we shall master the Russians in a relatively short time. Whether this means the end of the war, that, of course, depends largely upon other factors, particularly upon England. This is the most interesting moment in this war. Of course, you probably have your own opinion on this question and you will read in your papers and also in our papers great discussions upon the cause of the war. It is a pity to waste so much ink on this question. Nobody is the cause, history is the cause, general world conditions have brought it about.

* * * * *

I am afraid I have bored you too much with my talk. I have had four free days, living in a lonely Polish peasant house,—that may be my excuse. The purpose of my letter has originally not been to give you a political exposé, but simply to send you my heartiest greetings and wishes for Christmas and New Year. I beg you, since I am unable to write Christmas cards, to give my regards to all my old good Boston friends, and my heartiest wishes and greetings from your old

BÖHM.

P.S. If you know what it means it might interest you that since the battles in East Prussia I am "a knight of the iron cross."

QUESTIONS ABOUT THE HARRISON LAW.

BOSTON, March 16, 1915.

Mr. Editor: The new Federal law in regard to the dispensing of opium, the Harrison law, apparently imposes what I consider a dangerous limitation on doctors. For many years I have demanded that the druggist should write on the box a copy of any prescription which contained opium. This I consider a safeguard to the patient, and a help to the doctor. I have followed this practise since I knew of a case in which a mother gave a one-fourth grain morphine suppository to an infant to move the bowels.

I recently criticized a reliable druggist who did not follow my directions, and was told that the Harrison law forbade such a practise.

It seems wise that the BOSTON MEDICAL AND SURGICAL JOURNAL should ask for a ruling on this question from Washington.

Respectfully,

HENRY JACKSON, M.D.

March 17, 1915.

Mr. Editor: Since writing the above, two druggists say they consider it proper to put the prescription on the box. They quote the rulings on proprietary medicines which demand this practise. Truly,

HENRY JACKSON, M.D.

[NOTE.—There is nothing in the Federal law which prohibits the prescription from being written upon the label of the container. The State law, however, provides that: "The prescription shall not be copied except for the purpose of record by the druggist filling the same."

There is nothing in either law which prohibits the prescriber from giving whatever information or direction he may deem necessary for his patient to have; and if he thinks it is best, he can direct that the amount of narcotic, which the prescription contains, shall be clearly stated upon the label. This can be done without a copy being made.

The following rules interpreting the Harrison Law have recently been issued by the collector of internal revenue, port of Boston and are reprinted here for the further aid and guidance of physicians.

"A physician, registered under the law, must keep a record of the drugs dispensed, distributed or administered by him in his office. A record is also required to be kept of those drugs left with a patient to be taken in the physician's absence. No record is required to be kept of those drugs personally administered by the physician to the patient when away from his office.

"A physician or dentist who uses only minute quantities of drugs affected by the act, such as oculists, aurists and other specialists, may keep a record of the date when a stock solution is made and the date when such stock solution is exhausted, without keeping a record of the name and address of each patient to whom such drugs are administered. Where a physician engaged in a general practise otherwise administers such drugs, it will be necessary for him to keep a record of the date when any such drug is dispensed or administered, the kind and quantity, and the name and residence of the patient.

"Hospitals and sanatoriums must keep a record of drugs dispensed, distributed, or administered therein.

"Government, state, county and municipal officers, lawfully engaged in purchasing drugs specified in the act for the army and navy, the public health service and for government, state, territorial, district, county, municipal or insular hospitals or prisons, are held to be exempt from the provisions of the act relating to registry and special tax, to purchase and use of such drugs and to the keeping of records. Any such officers, however, engaged in private practise must register, pay special tax and keep the records, and comply with all the requirements of the law and regulations."

BELGIAN PHYSICIANS' RELIEF FUND.

REPORT OF THE TREASURER OF THE COMMITTEE FOR THE WEEK ENDING MARCH 20, 1915.

CONTRIBUTIONS.

Sebastian Co. Medical Soc., Fort Smith, Ark.	\$ 15.00
Dr. F. W. Johnson, Boston, Mass.	25.00
Dr. E. P. Quain, Bismarck, North Dakota	10.00
Dr. N. O. Ramstad, Bismarck, North Dakota	10.00
Dr. Haven Emerson, New York, N. Y.	15.00
Dr. Edward B. Angell, Rochester, N. Y.	10.00
Dr. T. A. Davis, Chicago, Ill.	25.00
New Bedford Med. Soc., New Bedford, Mass.	50.00
Dr. Newton B. Waller, New York, N. Y.	5.00
Dr. Charles G. Elcher, McKees Rocks, Pa.	5.00
Dr. William H. Perry, Sterling, Ill.	5.00
Dr. F. A. Spafford, Flandreau, S. Dakota	10.00
Dr. George L. Johnson, Newfolden, Minn.	1.00
Salt Lake Co. Med. Soc., Salt Lake City, Utah	100.50
Dr. and Mrs. Clem D. McCoy, Kenton, Ohio	50.00
Dr. E. A. Weiss, Pittsburgh, Pa.	10.00
Dr. Hubert Clayton, Hopkins, S. C.	5.00
Dr. C. E. Goodman, Virginia, Minn.	5.00
Tri-County Medical Society, Copiah-Lincoln-Pike Counties, Miss.	10.00
Dr. Harold W. Dana, Boston, Mass.	25.00

Receipts for the week ending March 20.....\$ 391.50
Previously reported receipts.....4830.00

Total receipts.....\$5221.50

Previously reported disbursements:

1625 standard boxes of food @ \$2.20..\$3575.00
542 standard boxes of food @ \$2.30.. 1246.60

Disbursements for the week ending

Mar. 20:

173 standard boxes of food @ \$2.30.. 397.90

Total disbursements.....\$5219.50
Balance\$2.00

F. F. SIMPSON, M.D., Treasurer,
7048 Jenkins Arcade Bldg.,
Pittsburg, Pa.

In an address delivered recently by Mr. Lindon W. Bates, vice-chairman of the Commission for Relief in Belgium, he said:

"The Commission was granted by the German Government not only the sole right to transport food into Belgium but given the active sympathy and aid of the German military authorities. Despite reports to the contrary, not one pound of food sent in has been appropriated. The treasury of the Commission draws from the generous heart of the world. Into this treasury has been put also all that the enveloped Belgian race could gather of the remnants of their shattered fortunes. It registers their struggle for survival. It represents their very all—the all that the better-to-do can give to help themselves and unreservedly to help their fellow being in the ranks already destitute and starving. This is our main purchasing fund—the greatest and the sacredest of all the donations."

The contributions made by the American doctors, through the Committee of American Physicians for the Aid of the Belgian Profession, are placed in the hands of the Commission, for distribution among the members of the Belgian Profession and their families.

Mr. Brand Whitlock, American Minister at Brussels, is credited with saying on March 17, that the food then in Belgium would not last longer than April 1.

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission announces an open competitive examination for mine surgeon, for men only. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Bureau of Mines, Pittsburg, Pa., at a salary ranging from \$2400 to \$2700 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

Graduation from a medical school of recognized standing, and at least two years' medical and surgical experience with industrial workers, are prerequisites for consideration for this position. Statements as to education and experience are accepted subject to verification. Applicants must not have reached their forty-fifth birthday on the date of the examination. This examination is open to all men who are citizens of the United States and who meet the requirements. Persons who meet the requirements and desire this examination should at once apply for Forms 304 and 2095, stating the title of the examination for which the forms are desired, to the United States Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, Post Office, Boston, Mass.; Philadelphia, Pa.; Atlanta, Ga.; Cincinnati, Ohio; Chicago, Ill.; St. Paul, Minn.; Seattle, Wash.; San Francisco, Cal.; Customhouse, New York, N. Y.; New Orleans, La.; Honolulu, Hawaii; Old Customhouse, St. Louis, Mo.; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R. No application will be accepted unless properly executed, excluding the medical certificate, and filed with the Commission at Washington, with the material required, prior to the hour of closing business on April 20, 1915.

NOTICES.

THE CUTTER LECTURE.

The Cutter Lecture on Preventive Medicine and Hygiene will be given by Joseph Goldberger, M.D., Surgeon, United States Public Health Service, Washington, D. C., on the subject of "Diet and Pellagra," on Friday, April 2, at the Harvard Medical School, 5 to 6 P.M.

These lectures are given annually under the terms of a bequest from John Clarence Cutter, whose will provided that the lectures so given should be styled the Cutter Lectures on Preventive Medicine, and that they should be delivered in Boston, and be free to the medical profession and the press.

The members of all classes in the Medical School, the medical profession, the press, and others interested, are cordially invited to attend.

BOSTON CITY HOSPITAL ALUMNI ASSOCIATION.

The annual meeting will be held at the Copley-Plaza on Wednesday evening, April 7, at 6.30 o'clock.

Dinner will be served at seven o'clock immediately after the business meeting. Dr. L. F. Woodward will preside.

A luncheon will be served in the hospital library at one o'clock to which members are invited by the Trustees.

WILLIAM H. ROBEY, JR., M.D.,
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MASSACHUSETTS GENERAL HOSPITAL.

A medical meeting, open to the medical profession, will be held at 12 noon on Monday, April 5, 1915, in the lower amphitheatre of the Out-Patient Department. Entrance on Fruit Street.

1. Exhibition of Cases.
2. Dr. Roger I. Lee. "Splenectomy in Pernicious Anemia."
3. Dr. Oswald H. Robertson. "Urobilin Estimation in the Stools. Its Relation to Hemolysis."
4. Dr. Paul D. White. "Alteration of the Pulse. A Common Clinical Condition."

F. A. WASHBURN, M.D.,
Resident Physician.

SOCIETY NOTICE.

THE SOCIETY OF AMERICAN BACTERIOLOGISTS.—The Council of the Society of American Bacteriologists has decided to hold a special summer meeting in San Francisco, August 3, 4, and 5, 1915. The chairman of the local committee of arrangements is Dr. Wilfred H. Manwaring, Stanford University, California.

APPOINTMENT.

Dr. Philip J. Castleman has been appointed director of the bacteriologic laboratory of the Boston Board of Health, in succession to the late Dr. James J. Seaford.

RECENT DEATHS.

DR. MICHAEL C. DRENNAN, who died on March 23, at Easton, Pa., was born in 1839. He served as a naval surgeon throughout the civil war and was retired in 1899 with the rank of rear-admiral.

DR. DANIEL J. O'SHEA, who died of pneumonia on March 23 at East Boston, was born there in 1876. He was a graduate of Boston College and studied at the Harvard Medical School. He is survived by his widow, two daughters and one son.

DR. AMOS PATERSON WEBBER, for 32 years a practitioner of New Bedford, Mass., died in that city March 20, aged 55 years. He was a graduate of Bellevue Hospital Medical College in 1883 and was a member of the staff of St. Luke's Hospital. He was a Fellow of The Massachusetts Medical Society and of the American Medical Association, and was prominent in Masonic circles. He is survived by his widow.

BOOKS AND PAMPHLETS RECEIVED.

Discussion on the Milk Supply as a Causal Factor in Relation to Tuberculosis, by Sheridan Delepine, M.D., M.Sc. Reprint.

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